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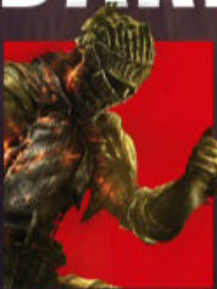
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BATTLEFIELD
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APEX LEGENDS?



PATH OF
EXILE

HOW IT STOLE
DIABLO'S CROWN



HARDWARE

GRAPHICS OPTIONS EXPLAINED

MAKE YOUR GAMES
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FUTURE

ISSUE 331



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“FRONTIER IS A MASTER OF CRAFTING INTRICATE, BELIEVABLE DETAIL”



One of the best things about working at PC Gamer is that, when a studio tells you that they're working on a hyperdetailed management simulation featuring some of the most advanced animal animation and AI around, I get to put it on our cover. Frontier is a master of crafting intricate, believable detail that adds rich depth to their simulations. As revealed in

Andy's cover feature, the studio is going all out with *Planet Zoo* to create some of the most realistic animals around.

This issue we also celebrate another master of craft. Turn to page 48 to read our massive celebration of FromSoftware's *Dark Souls*.

PHIL SAVAGE
Specialist in
Giraffes

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@Octaeder

This month
Put a giant lion face on the cover, like we're the National Geographic of PC gaming.

Phil Savage

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EDITOR
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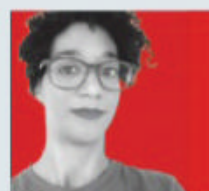
The PC Gamer team



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This month
Enjoyed a virtual menagerie, featuring lions, apes and a deer that he wouldn't shoot.



MALINDY HETFELD
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This month
True to form, our acting deputy editor started reviewing Japanese visual novels soon after arrival.



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This month
Not only completed *Sekiro*, but also took time to write about Artorias and his sad dog.



XALAVIER NELSON JR.
Specialist in
Hippos

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@WritNelson

This month
Continued to do everything, including our monthly dev column.

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JUNE 2019

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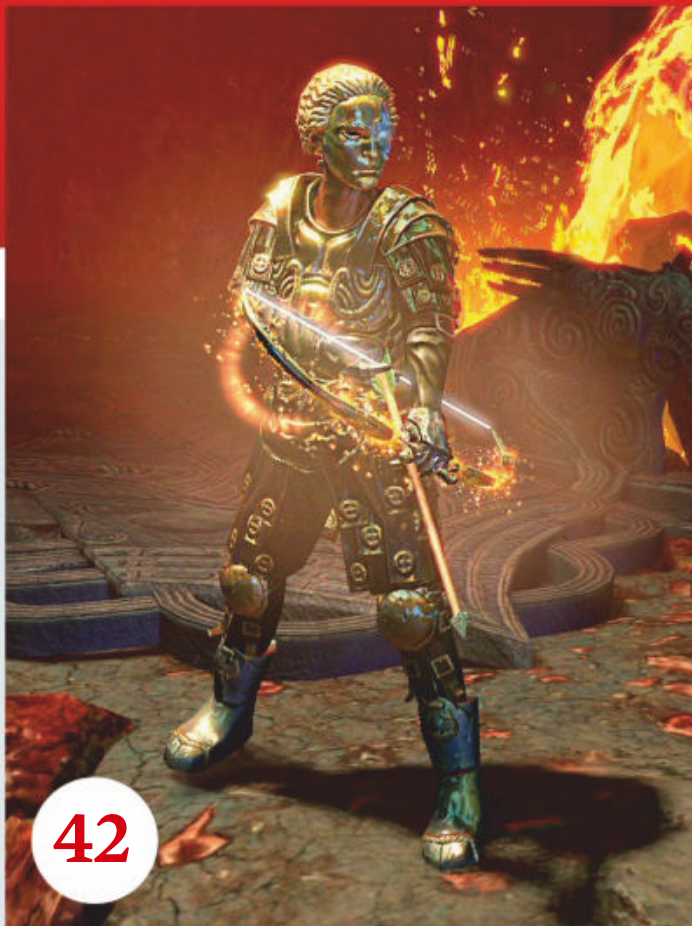
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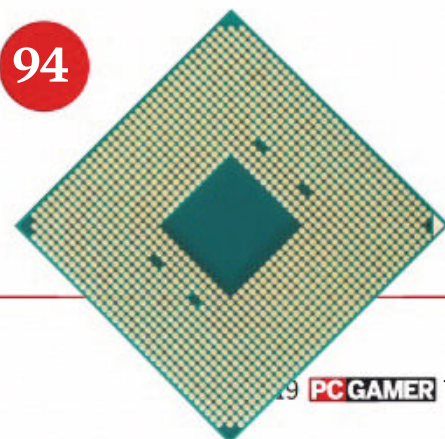
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MONITOR

NEWS | OPINION | DEVELOPMENT



BORDERLANDS 3 REVEALED

Gearbox's colourful loot shooter is coming back, and promising a billion guns

For years, every tweet by Gearbox CEO Randy Pitchford has had variations of the same reply under it, “What about *Borderlands 3*?” And at this year’s PAX East, those fans’ prayers were answered. *Borderlands 3* is due for release on September 13, 2019 and will feature a loot system that will, if Gearbox is to be believed, generate a *billion* guns.

A suitably chaotic trailer, opening with the words “MAYHEM IS

COMING”, shows a refinement of the series’ trademark comic book art style. It’s mostly business as usual: Mad Max-style car chases in the desert, masked bandits, shanty towns, and big, silly guns. But there are a few enticing glimpses of new environments, including a neon-lit futuristic city and a green, swampy biome. Oh, and Claptrap is back, because of course he is.

Borderlands 3 will also feature new playable characters. Amara is a muscular, melee-focused Siren who can conjure up magical fists. Moze is

a Gunner who rides a mecha that a second player can hop on for a ride. Zane is an Operative who uses gadgets such as a damage-dealing drone. And FL4K is a creature-loving robot Beastmaster who can summon animals to fight alongside the party including Skags, Spiderants, and other critters.

It sounds like a typically eccentric bunch, and the previous games’ heroes will return too – but as quest-giving NPCs this time. Fans of Telltale’s adventure series *Tales of the Borderlands* were also delighted to

BIOWOES

DRAGON AGE



Kotaku's lengthy report on what the reaction to *Anthem* could mean for *Dragon Age 4* has me making prayer circles for the game, especially since scrapped gameplay elements include heists and a narrative system built around your decisions. Still on my wish list: healthy working conditions for the devs. ■ **MH**

ON THE MARCH

MOUNT & BLADE



In a recent developer blog, *Mount & Blade II: Bannerlord* developer TaleWorlds just casually referenced an "upcoming" closed beta test. And that's it. That's the news. At some point (hopefully) soon, TaleWorlds will finally let a handful of people play the much anticipated sandbox sequel. ■ **PS**

CASH MONEY

HITMAN 2



A roadmap for *Hitman 2* has been revealed including, excitingly, a level set in a bank. Due for release this summer, the level sounds like a perfect stealth challenge. Another level is called The Resort, and I'm hoping for something similar to Sapienza. It's an exciting time to be a *Hitman* fan. ■ **AK**



see some characters from that game making an appearance also. Curiously, voice actor Troy Baker expressed disappointment over not being recast as Rhys, while Randy Pitchford claims he turned the role down. Something's going on there.

GEARING UP

As for improvements, Gearbox wants to make co-op (arguably the real reason to play a *Borderlands* game) more streamlined and accessible. If you're playing with a lower level player, the game will be balanced in such a way that they can make a meaningful contribution to a firefight. This means you won't have a low-level friend dealing one point of damage to a more powerful enemy, and dying every five seconds, which is good news for everyone involved.

The way loot works is also being rejigged. In previous *Borderlands* games every player in a co-op team

would choose from the same pool of loot drops, but now you have the option for loot to drop per-player, which should avoid any heated arguments about who gets which gun. Gearbox is also promising greater weapon variety, with the damage, range, and ammo capacity randomisation you'd expect, but also special effects and perks too. With a billion permutations, this should hopefully make for a pretty exciting loot system.

Gearbox has described *Borderlands 3* in its marketing material as the "original loot

THE POPULARITY OF THE GENRE HAS SURGED SINCE BORDERLANDS 2

shooter", which suggests the studio is taking on the likes of *Destiny* and *The Division*. The popularity of the genre has surged massively since *Borderlands 2* was released back in 2012, and it seems likely Gearbox will learn some lessons from the current titans of the genre. But it's nice to see that, judging by the trailer at least, this is *Borderlands* through and through. Love it or hate it, this is a series with a distinctive personality.

After the early demise of its ill-fated hero shooter *Battleborn*, Gearbox will surely go all-in with *Borderlands 3*. Its launch on September 13 will only be the beginning: you can expect expansion DLC well into 2020 and maybe even beyond, depending on how well it does. And judging by the hype generated by this announcement and trailer, it's safe to say *Borderlands 3* will fare better than *Battleborn*.

Andy Kelly

ABOVE, LEFT: Yes. He's back, for better and worse.

ABOVE, BOTTOM: I award this image nine *Borderlands*-es out of ten.

The Spy

BUT WHO WATCHES THE SPY?

The Spy has just returned from a relaxing holiday, touring the various museums of the United Kingdom. You're probably thinking this is part of some escapade or caper, maybe even the precursor to whirlwind string of heists. You'd be wrong. You see, The Spy can't guarantee that the police will never read this page. The Spy can't even be sure that printed word can't be used in a court of law. And so, for all intents and purposes, this was a 'vacation'. OK? Are we all on the same page? Good.

Having been thoroughly convinced by the security of The British Museum, The Spy decided to visit some of the lesser known sites of historical note. Did you know there was a Dog Collar Museum in Maidstone? A Lawnmower Museum in Southport? And even the Derwent Pencil Museum in Keswick, which is home to the world's biggest colouring pencil. If one were to hypothetically steal such a thing, The Spy recommends constructing a makeshift catapult around it, and letting the aerodynamic shape carry it into Bassenthwaite Lake to be retrieved by a team of clandestine divers.

And so The Spy arrives home with an SD card full of photos and blueprints and contact details for people knowledgeable in the construction of siege weaponry... just normal

mementos of a fun trip. What The Spy *doesn't* have is any idea what's been happening in the world of PC gaming.

Hold on a second... just let The Spy boot up this computer and check... oh God... oh no... oh BioWare.

Following on from his lengthy report into the problems of *Anthem's* development, Kotaku's Jason Schreier has returned to the BioWare well to shine a light on what's happening with *Dragon Age 4*. First announced at Geoff Keighley's ode to the worst excesses of the industry, The Game Awards 2018, *Dragon Age 4* has – according to Kotaku – actually entered pre-production following the release of *Dragon Age: Inquisition's* Trespasser DLC.

The early plan for *Dragon Age 4* – codenamed *Joplin* – sounds great. Players would control a group of spies operating in the Tevinter Imperium, a powerful magocracy to the north of Thedas. In stark contrast from *Inquisition's* Hinterlands, *DA4* would focus on smaller areas that players would frequently return to.

DRAGGING ON FOR A DRAGON AGE

Structurally, then, it offers shades of the maligned *Dragon Age 2*, but on a bigger scale and (presumably) with more than one warehouse. In fact heists would supposedly be a focus of the campaign, along with a systemic narrative system that would let players persuade or extort guards.

Unfortunately, it seems, *Joplin* isn't to be. According to Kotaku's report, the project was first put on hold in 2016 so the team could help on *Mass Effect Andromeda*, and then cancelled entirely in October 2017 so the team could help on *Anthem*. It was restarted with the codename *Morrison*. It's currently unclear how much of the original vision remains, but this new *Dragon Age 4* is known to have some form of a 'live service' element.

Things have clearly been difficult at BioWare. Hopefully the studio will work to fix the mismanagement that seems to have plagued *Anthem's* development. As for

Dragon Age 4, maybe this new version will have heists, maybe it won't. All The Spy can say for sure is that there's a pencil in Keswick with The Spy's name on it. Spy Out. ■
The Spy



THE SPY
The Spy once stole the Statue of Liberty during some jerk's magic trick.

DID YOU KNOW THERE WAS A DOG COLLAR MUSEUM IN MAIDSTONE?

This month in... 2009



1 In his cover feature, Tim Edwards' suggestion that the *StarCraft II* trilogy might not be finished until after 2012 prompts a panicked "Oh God, I hope not" from then senior designer Dustin Browder. In the end, *Legacy of the Void* wouldn't arrive until 2015 – long after Blizzard's RTS sequel had transformed esports forever. "The saviour of PC gaming" indeed.

ISSUE
201, June 2009
ON THE COVER
StarCraft 2
IN THE CHARTS
Boom Boom Pow – Black Eyed Peas

2 *PC Gamer* gets a new-look Extra Life containing brand new features like Now Playing and Reinstall. Graham Smith explains the joys of a little game called *Spelunky*.



3 Quintin Smith tells a fascinating tale of tragedy, heroism and wanton cruelty in hardcore multiplayer survival sim *Wurm Online*. "Egg's my only friend in the world, and right now he's staring death in the face over a mile away. I just don't know in which direction." It's a brilliant example of the surprising turns that online interactions can take. Spoilers: it doesn't go well for Egg.



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Special Report

PCG INVESTIGATES



You don't need many words to tell what'll happen next.

FAN SUBBING

How localisation makes games enjoyable for everyone, everywhere

Localisation is a word for a number of processes all to do with ensuring a game is ready for a specific local market. This includes everything from creating a translation that stays faithful to the originally intended meaning, to cutting and amending content in line with different countries' laws. The *Yakuza* series' great localisation is an important factor in its success, and so I asked localisation producer Scott Strichart about the pitfalls of his job.

In order to localise a game correctly you need to have two things: text and context. As with any big creative project on a schedule, you unfortunately don't necessarily get both at the same time.

"Until recently, we'd never started localisation prior to the game being done in Japan, which was amazing, because we could just boot up every scene, every substory, every movie right in game," Strichart says. I imagine him wistfully staring off into the distance.

To finish everything on time, localisation now often begins before the original text is even finalised. In some cases Strichart and his team make educated guesses at who is talking to whom, how far away speakers are from each other and sometimes even their gender, the latter of which the form of address in Japanese can help with.

"Once a particular scene comes online, we're able to check it out and adjust accordingly ... It'll be an ongoing process to smooth this out with [developer Ryu ga Gotoku Studios], but I'm committed to doing that." Strichart, who took up his current position prior to the release of *Yakuza 0*, is an enthusiastic spokesperson for localisation with an apparent love for language.

Having started in QA himself, he acknowledges that building a translator's skills takes time and teamwork. There's no small amount of project management behind building an experienced team.

"Usually our more experienced translators and editors handle the main story, while the supporting translators and editors get assigned swaths of text where it makes sense to group up. For instance, all the substories, all the minigames, all the tutorials, with some natural crossovers when it makes sense to do so.

"To date, I've also stacked a ton of this work on my own plate, because I enjoy the creativity of it. I love having translators and editors on my team who grow with the games, because they're already familiar with things like the game's worldview and the styling we use."

MAGIC WORDS

Arguably the most important skills to develop are listening and research. 'Intent' and 'atmosphere' are two words that



Making meaning

Good localisation is more than just translating something from one language to another.

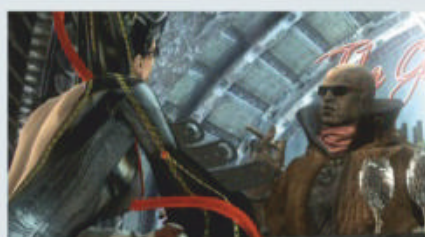
Language is full of cultural references, emotions and modes of expression that differ in each country. Even if you understand the literal meaning of something, you need context to react correctly, for example to tell if someone is being sarcastic.



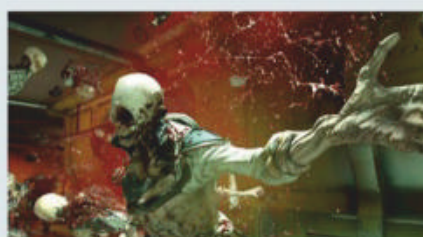
FAR LEFT: The writing and the pose convey that Kiryu is the cutest maid.

LEFT: The yakuza's aggressive behaviour extends to their form of speech.

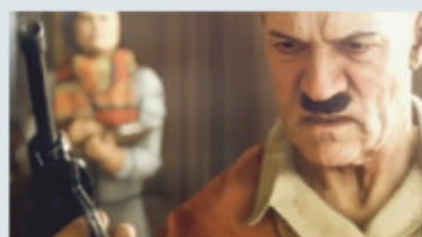
CULTURAL CHANGES *Localisation also addresses the following*



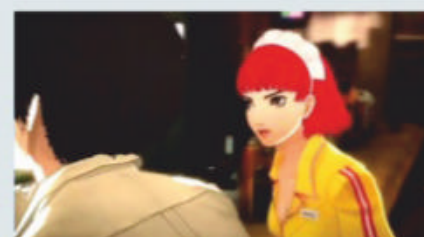
DIALOGUE FOR DUBBING
Dubbed dialogue in games isn't always identical with written text. To make it natural, words are changed or omitted.



GORE
To ensure games receives a certain content rating, gore may be removed or turned into an optional component.



SYMBOLS
Certain symbols may be forbidden. The ban on swastikas in Germany is a good example that also applies to games.



OFFENSIVE MATERIAL
Insensitive material or slurs may be removed. Future *Yakuza* remakes will, for example, cut transphobic content.

you hear regularly in localisation, and Strichart explains why. "This game is set in Japan, and I would never want to lose its sense of place and culture at the cost of a little confusion over street food with no one-on-one translation. Maybe you'll even learn something from the game! Generally speaking, English is a more idiomatic language, so finding idioms that still match the intent of the Japanese dialogue without necessarily matching the line word-for-word is the touch of magic we bring to the game in hopes of making it sound like good dialogue to the English ear."

I bring up a scene from *Yakuza Kiwami 2*, out for PC this month, that serves as a good example for the magic Strichart is talking about. In it, Kiryu gets invited into a club where a gang of adult men roleplay as toddlers. When he refuses to play along, the gang leader shouts, "Let's pacify this bitch!"

"The line was originally 'Let's crack this bitch' in *Yakuza 2*, but Jon Riesenbach, my editor for *Kiwami 2*, really took it to the next level. See? Magic."

CHANGING ACCENTS

Localising also means finding a way to approximate local ways of speaking. Dialects use specific words and accents limited to one country. Western Japan's Kansai dialect used in the series by characters such as Majima is famous throughout the country, but there's no singular way to localise it, mostly because any accent (such as the

Southern American accent *Ace Attorney* uses in its place) is also specific to one location. Scott weighs in on the tricky question of how to provide a consistent tone in a text several people work on.

"I made a point to overhaul Majima's accent starting with *Yakuza 0*. I aimed to remove any direct correlation one could make to an American South accent and embody what is generally perceived as being the root of the Kansai dialect – faster speech, colourful language, and high energy. This accent actually proved problematic, because I was the only one who could really write in it.

"Sam Mullen, our director of production, recently

came down on me for it, joking that if I got hit by a car, Majima would have to be written out of the series. I have since written an internal series accent guide and someday, I'll be forced to let someone else write him."

There will always be instances in which a reference is so specific to its culture that fitting idioms just don't exist. Strichart says that even when a few Japanese puns are lost, there are enough ways in which the localisation team can make up for it elsewhere. I appreciate Strichart for shedding more light to a part of the game-making process that we tend to take for granted, especially as English speakers.

Good localisations don't just give us something new to play, they also hone our intercultural skills, allowing us to take a peek at the world behind a game. ■

Malindy Hetfeld

"I MADE A POINT TO OVERHAUL MAJIMA'S ACCENT STARTING WITH YAKUZA 0"

DESIGNING REPLAY

Using NG+ to build larger worlds in smaller spaces. *By Xalavier Nelson Jr*

New Game Plus (styled as “New Game+” or “NG+”) typically allows players to begin a game all over again, retaining a significant amount of unlocks and potentially gaining new insight into a game’s world through added features. It allows developers to extend potential game time using existing content and the addition of this mode in the many forms it can take seems to be popular – so why aren’t more developers doing it?

“It’s important to understand that ‘the same but different’ is actually ‘different, but some things might be the same,’” says Spearhead Games senior designer Graeme Lennon. “It’s rarely as simple as tweaking some numbers for a harder NG+. Wave timings, hit counts, heal rates, etc, all interact and all need to be tested.” After the success of Spearhead Games’ debut game, *Stories: The Path of Destinies*, they built their second game *Omensight* entirely around the concept of exploring branches and loops. This ultimately took the form of a supernatural action murder mystery. “Because our game has you revisiting many of the same spaces, with different characters, in different contexts, with different events, it

did become really complicated to layer all of the scripting and design elements on top of each other,” Lennon says. “Doing it again I’d have implemented things differently, but isn’t that true about every game?” Speaking to other developers experimenting with similar content, the complexity Lennon encountered is not unusual. The developers of *State of Decay 2* encountered problems that are almost the polar opposite, for not just New Game+, but linear content in general.

In *State of Decay 2*, New Game+ lets players take characters that survive the final mission and use them in another playthrough of the open-world survival game to build a new set of communities. “Rather

than having a single story, our game is designed to tell multiple stories about multiple communities, all living in the same apocalyptic world,” *State of Decay 2* software engineer Jørgen Tjernø tells me. “We wanted our game to

be able to generate new characters and stories endlessly, as players started community after community. That meant we needed to build up a really intricate character generator, and an extremely flexible mission system that could create new characters and stories out of whatever raw materials the players provided. There’s a good reason why most games don’t try this.” Tjernø elaborated, “Most

games have tools that are designed to make scripted events happen under very specific conditions, and introducing dynamic elements is a weird, disruptive challenge. We had the opposite problem. We built our tools entirely

around supporting dynamic content and arbitrary player behaviour, so at the few times when we actually needed to make something very specific happen, it was an elaborate process to get the tools to do it at all.”

SECOND PLAYTHROUGH

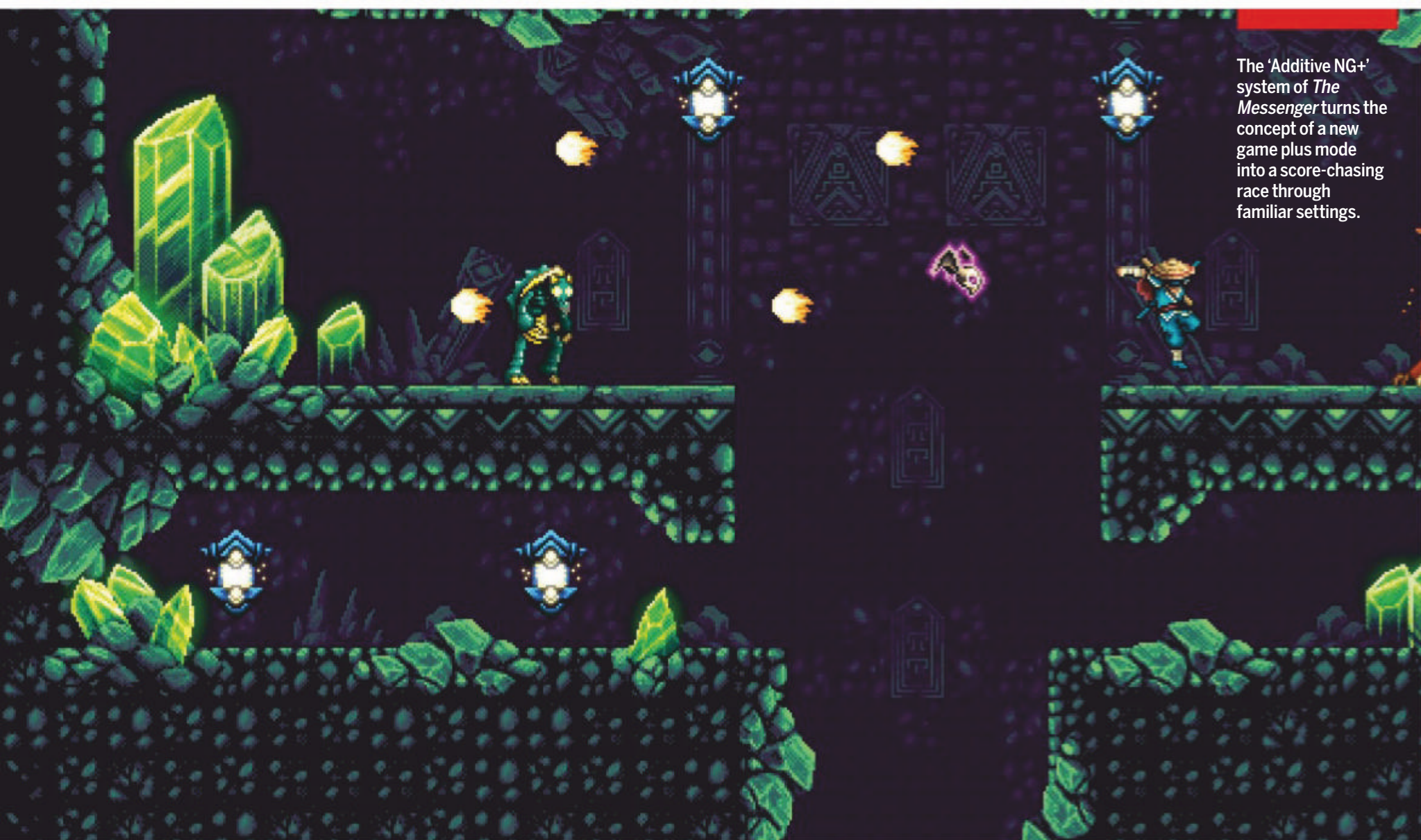
Technical action game *Lucah: Born of a Dream* follows the mold of games like *Nier: Automata* and makes the player’s evolving prowess a critical part of the story that unfolds over two playthroughs. The dynamic knowledge and translation systems in Inkle’s narrative archaeology game *Heaven’s Vault* combine for the New Game+ versions of transcription puzzles to always be new, and get increasingly specific over time, ensuring players are constantly learning more about the world they’ve chosen to keep engaging with. Thierry Boulanger of platforming adventure *The Messenger* tells me how the team’s approach to New Game+ changed the dynamic of the entire game, “The player gets to pick an additional item to lock-in from the get go, making the second portion of the game shorter every time. By something like NG+14, you have nothing left to fetch in the world so the whole adventure is a linear path to the final boss, but everything also kills in one hit by that point, and the fee to get resurrected is so high that touching anything probably means perma-death. In this way our NG+ becomes a meta-game of how far you can make it, with dynamically increasing difficulty and a trackable highscore.”

Reading the answers sent in from these developers, and others behind games including *Minit*, and *Artisan: Going Home Again*, my view of New Game+ changed substantially. New Game+ isn’t developed as an afterthought – it’s developed around.

It’s as fundamental a part of the game as the first playthrough, with even less of a guarantee of being seen by the majority of its audience. ■

XALAVIER NELSON JR
I’m a full-time game writer and narrative designer, with credits inside and out of gaming.





The 'Additive NG+' system of *The Messenger* turns the concept of a new game plus mode into a score-chasing race through familiar settings.



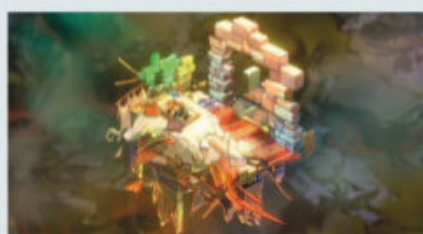
FAR LEFT: The focus on individuals runs deep in *State of Decay 2*.

LEFT: After the success of the recursive loops in *Stories: The Path of Destinies*, Spearhead Games created a game structure built entirely around the concept, resulting in the murder mystery of their second title, *Omensight*.

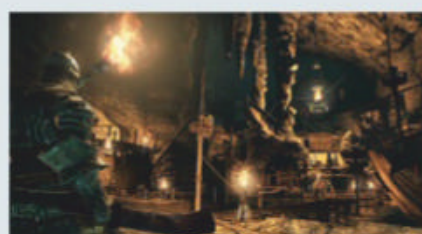
NEW GAME NODS *NG+ can be used by developers to surprise players in their playthrough. Spoilers ahead!*



BATMAN: ARKHAM KNIGHT
Arkham Knight begins with the cremation of Rocksteady's iconic Joker, setting the tone for the rest of the campaign. In your second playthrough, Joker still burns – until his corpse begins laughing in a final surprise.



BASTION
One of the narrator's final statements in a *Bastion* ending is "Maybe I'll see you in the next one." The first words in its NG+ are "...I'll see you in the next one", echoing from your previous playthrough.



DARK SOULS II: SCHOLAR OF THE FIRST SIN
The Duke's Dear Freja is a spider-summoning abomination. In NG+ she appears earlier in Brightstone Cove Tseldora, springing over the cliff when you expected to find a bonfire.



THE QUIET MAN
A patch released a week after the game's initial release added sound and dialogue to the critically-panned journey of a deaf martial artist... guy. It didn't make the game better, but at least it exists now.

DISCLAIMER: As a professional developer, I am on friendly and/or working terms with parties mentioned in this piece.

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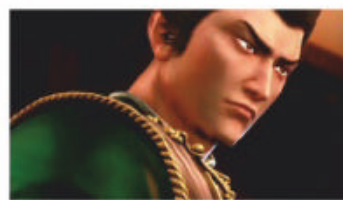


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RELEASE
August 2019

DEVELOPER
Ys Net, Neilo

PUBLISHER
Deep Silver

LINK
www.ysnet-inc.jp

SHENMUE III

Ryo Hazuki's quest for vengeance continues

Once upon a time, lavish martial arts adventure *Shenmue* was the most expensive videogame ever made. So expensive that when it failed to live up to sales expectations it contributed to the demise of the Dreamcast. A sequel was released in the west on the original Xbox, but it couldn't stop the inevitable – *Shenmue* was, essentially, dead.

Which makes the existence of a third game something of a miracle. Almost 20 years later, after tireless campaigning from the game's vocal and dedicated fanbase, Ryo Hazuki's story will continue. Creator Yu Suzuki is back at the helm, and the story picks up where it left off in *Shenmue II*. Ryo finds himself in rural China, on the trail of Lan Di, the man who murdered his father. *Shenmue III* raised over \$7 million on Kickstarter, illustrating how hungry people are to see an end to – or a continuation of – Ryo's story.

Shenmue III begins in a sleepy village called Bailu, which is a radical change of scenery from the first game's Japanese suburbs and the second's bustling Hong Kong streets. The village is nestled deep in the mist-shrouded mountains of Guilin, China, a region Yu Suzuki himself visited while researching the project. *Shenmue* is famous for its attention to detail, and it's heartening to see that Suzuki is still dedicated to creating authentic, atmospheric worlds. You'll visit more urbanised, city-like locations later in the game, but the bulk of the opening hours will revolve around Bailu.

Like the first game, all the villagers in Bailu will have their own routines, homes, and personalities. This is a return to the more close-knit, parochial feel of Yokosuka, rather than the chaotic, impersonal bustle of Hong Kong, which should make for a much more immersive

setting. Through these people you'll learn about the culture and history of China, but unlike the Dreamcast games, not everyone you meet will immediately want to tell you their whole life story.

Ryo asks around for clues about Lan Di, but the villagers are reluctant to talk to him – cold, even. This is an example of the new Affinity system, which requires you to get to know people, or earn a reputation, before they'll trust you enough to reveal important information. *Shenmue* is, at its core, a detective game, and this should make the investigation parts of it much more interesting and dynamic. And it makes sense from a story perspective, because an isolated village like this would be wary of strangers wandering around asking questions.

Accompanying Ryo is Shenhua, a woman who appeared in visions in the first two games, and briefly at the end of *Shenmue II*. She and Ryo share some kind of deep, mystical bond that will be explored more deeply in *Shenmue III*. But she also comes in handy when you're trying to get the people of Bailu, her home village, on your side. If you talk to someone alone they might not be receptive to your questions, but with Shenhua in tow they'll realise you're a friend and be more willing to speak. She's certainly a handy person to have around.

FIGHT CLUB

As well as playing detective, Ryo also spends a lot of time fighting. The combat in the original games was rooted in Suzuki's *Virtua Fighter* series. *Shenmue III* features the same chunky arcade animation, but with smoother transitions between moves and a greater sense of physicality. The combat will also be bolstered by an RPG-style progression system. Ryo can take part in a number of timing-based training minigames that will increase his key stats: Attack Power and Endurance. Developing these will then boost a third stat, Kung Fu, which unlocks advanced fighting techniques. ➤

THE COMBAT WILL ALSO BE BOLSTERED BY AN RPG-STYLE PROGRESSION SYSTEM

Shenmue III



Ryo meets with the mysterious Shenhua.



Training is all about timing, reaction, and dexterity. One challenging minigame called Horse Stance involves Ryo holding himself in an uncomfortable-looking position, which you have to keep him in by rhythmically tapping a button. Fail to hold the pose and you'll have to try again, but maintaining it will increase your Endurance stat. Alternatively, if you want to increase your Attack Power, there's the one-inch punch minigame, based on the move popularised by Bruce Lee. This involves hitting a dummy in time with an on-screen prompt, and the window to strike gets narrower with each hit.

But if you want something a little more dangerous than wooden training dummies, you can practice your martial arts against real people. A local dojo will offer up students to spar with, or you can visit the Rose Garden. Located on the grounds of a beautiful, ornate temple, this is a fighting club where you can pay to battle increasingly skilled opponents. If you can defeat them, not only will you get a much bigger boost to your stats, but you'll earn some decent cash too. This is an optional activity, but one that'll be worth dedicating time to.

There are some light RPG elements in *Shenmue III* too. Ryo's Endurance stat extends to running in the world, and his stamina will drain as you sprint around. To restore it you can buy food from convenience stores, and munching some chow before an important battle will become a part of your routine. While you could train and develop moves in the original games, there was no clear feedback that you were improving. But here Ryo's growth is clearly conveyed through progression meters, making it much more satisfying.

Ryo himself is the same as ever – sullen, oblivious, and prone to asking bizarre questions. For Suzuki it was important to retain this aspect of his personality, because fans love it. But he also promises that Ryo will grow as a character in *III*. The futility of his quest for revenge is a big part of the first two games. People are forever telling him what a stupid idea following Lan Di is, which he brushes off. But hopefully, in this game, some of that will finally get through to him.

COREY MARSHALL, THE VOICE OF RYO IN THE ENGLISH DUB, IS RETURNING

Oh, and fans will be glad to know that Corey Marshall, the voice of Ryo in the English dub, is returning – not to mention composer Ryuji Iuchi, scriptwriter Masahiro Yoshimoto, and character designer Kenji Miyawaki. Suzuki has also hired architect Manabu Takimoto to ensure the various buildings in the game are authentic, something he did in the first two games, which resulted in a grounded and convincing setting. It's clear a lot of love is being poured into *Shenmue III*, and it's great to see so many key members of the original development team coming back to finish the job.

I'm also encouraged by the fact that Suzuki says *Shenmue III* will feel like a *Shenmue* game, and that he's resisting the influence of modern open world games. The camera controls have been tweaked, but otherwise this will control the same as the first two games. You can still switch to a first-person camera and look around, and you can still interact with drawers and cupboards to find hidden items. Fan favourite features including QTEs, arcades with playable games, and the all-important capsule toy machines are also making a comeback.

NEW GROUND

This stuff will conjure up warm, fuzzy memories for fans, but I'm convinced *Shenmue III* doesn't just exist to milk nostalgia. The deeper combat, RPG elements and Affinity system are examples of Suzuki pushing things forward, and I'm sure there are more new systems waiting to be revealed. It's been confirmed that Ryo will be able to, as before, get a job and earn money, but developer Ys Net is keeping the details of that aspect of the game close to its chest. I have my fingers crossed for the forklift trucks to return, but I can take or leave that crate-shifting minigame from *II*.

At this point it's too early to say whether *Shenmue III* will live up to the previous two games. But if it's half as weird, heartfelt and stupidly detailed, I'll be happy. I never thought I'd see the day Ryo Hazuki's story would be continued, let alone 20 years later, so that alone is worth celebrating. Suzuki clearly has a fondness for *Shenmue*, and it's evident in the way he talks about this new game that he really cares about making a worthy sequel. It isn't out till August, which is the perfect excuse to play (or replay) *Shenmue I* and *II*. The superb remaster collection released for PC last year.

Andy Kelly



The QTE arcade game returns.



Training is as important as ever.



Still wearing the same jacket.

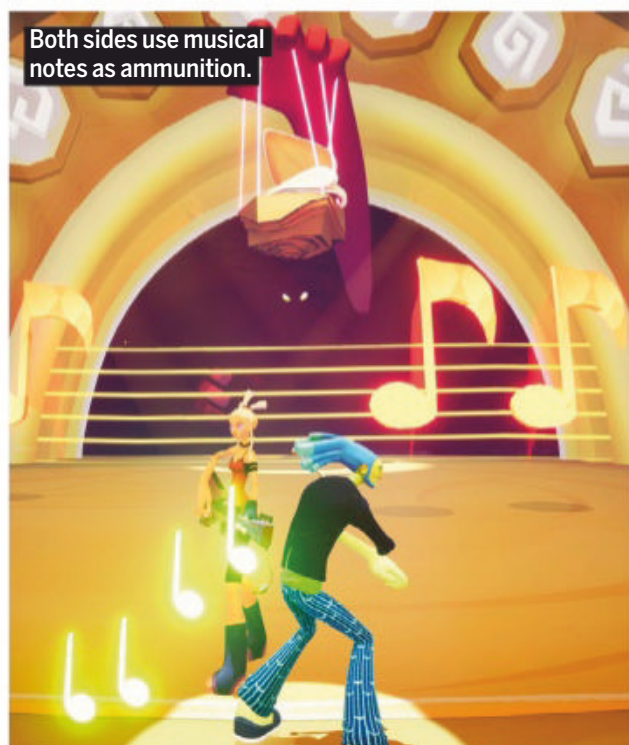
PREVIEW

No Straight Roads

Battles have several phases.
This was once a concert stage.

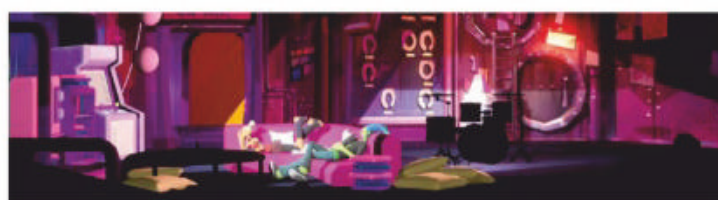


Both sides use musical
notes as ammunition.



A giant DJ, rotating planets.
There's a lot to see.





NEED TO KNOW

RELEASE
2019

DEVELOPER
Metronomik

PUBLISHER
In-house

LINK
www.metronomik.net

NO STRAIGHT ROADS

Metronomik lives up to its name with this debut

Music is an essential part of any game, and its role has grown from mere background accompaniment thanks to advances in adaptive music and the popularity of rhythm games. With *No Straight Roads*, Metronomik wants to deepen the relationship between games and music further.

I've no sooner shaken Wan Hazmer's hand than we start exchanging our favourite rhythm games. Yet as much as he loves them, the Metronomik co-founder reckons that we too often conflate games about music with rhythm games – a genre players who don't think themselves musical tend to shy away from.

No Straight Roads is an action game first and foremost. You take control of Mayday and Zuk who together form a rock band – a clear declaration of resistance in a world lead by an EDM empire. To reinstate rock's influence, they have a number of battles with characters representing different musical genres, from EDM to pop and even classical.

Each battle has a distinct look and feel. In my standoff against DJ Subatomic Supernova, the stage spins like a vinyl record while I'm transforming planets into ammo. Later on in the battle I'm trying to avoid said planets while the DJ tries to suck me into a black hole. *No Straight Roads* plays like an action-adventure. I can either hit things with my characters' instruments or play music really fast to transform items into weapons.

"These are two of the ways we express the power of music," Metronomik co-founder and creative director Daim Dziauddin tells me. "Music in *No Straight Roads* will affect the world in three ways – morally, aurally and physically." In practice this means that as your influence grows, you not only become stronger, but the people become aware of the spell EDM has put them under.

You can hear the interplay between rock and the other musical genres through *No Straight Roads*' sound design. Three different musical channels react dynamically to how well you're doing in battle and to your overall progress.

BEAT 'EM UP

The music isn't the only dynamic aspect of *No Straight Roads*. From the vibrantly coloured stages full of dancing notes to the eye-catching design of each enemy, the game makes an impression long before you focus on its tunes. "We think about how to represent music through character design," Dziauddin says. "We decide what musical style would be fun to battle and then we go from there."

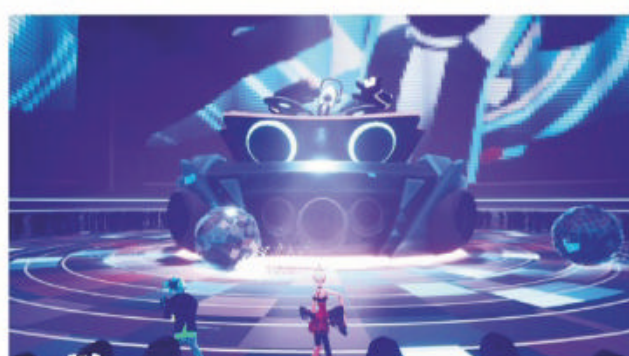
PLAYED IT

Meanwhile the EDM influence is always there, because Metronomik enjoy both EDM and rock and want to represent the discussions between fans of each genre.

Metronomik doesn't see *No Straight Roads* as a way to establish the superiority of rock, however. "We really want to teach players that they're more musical than they think they are. We've designed battles that follow the beat, so if you can see the pattern you'll do better. Battles in *No Straight Roads* also use our innate awareness of when the chorus in a song happens or when the speed changes," Hazmer explains. "Everyone can enjoy the game regardless of musical ability, but I think you're going to be surprised at how easily it comes to you." He stresses that in order to make a game that appeals to a broad audience, everyone at Metronomik gets a say in the design process.

This explains *No Straight Roads*' chaotic charm. I quickly got caught up in the ambitious concept – eager to see more thanks to Metronomik's genuine enthusiasm for music, and the creativity on display.

Malindy Hetfeld



"WE REALLY WANT TO TEACH PLAYERS THAT THEY'RE MORE MUSICAL THAN THEY THINK"

PREVIEW

Afterparty

Lola is putting her college education to good use.



NEED TO KNOW

RELEASE
2019

DEVELOPER
Night School Studio

PUBLISHER
In-house

LINK
www.afterpartygame.com

AFTERPARTY

A game where you drink and play drinking games

I've discovered the red thread between games from Night School Studio. They feature characters in or barely out of school and they mostly take place at night. It's all in the name! Seriously, *Afterparty* and *Oxenfree* share natural-sounding dialogue, characters who were cooler than you at school, terrible jokes and supernatural incidents aplenty.

PLAYED
IT

Following their deaths, best friends Milo and Lola end up in Hell. After they make the acquaintance of the taxi driver of the river Styx, they meet a serial killer about their age and demons with several sets of eyes at one of the underworld's many bars. Getting drunk is better than getting tortured, but the duo still wants to leave, and the only way to do so is to out-drink the devil. Since you can't simply turn up at the devil's private party, Milo and Lola have to build a reputation first.

When getting to know the more influential inhabitants of Hell, it doesn't



matter what you say as much as how you say it. Different drinks make Milo or Lola bolder, more charming or more empathetic, and you need to choose the right injection of liquid confidence to get someone on your side.

DRINK DO US PART

Your skill at entertaining others through various drinking games matters as much as your charm. My demo features a very rudimentary game of beer pong, during which I liberally curse out my opponent to ascertain my dominance. The more drunk I get, the easier it is to aim, even as the Hell world gets fuzzy at the edges. There's just as much cursing in this game as there is drinking, which is to say a whole lot. True to Night School's style Milo and Lola are

cute and fashionable, and they stand out against the backdrop of Hell.

Like the characters in *Oxenfree*, sass is their first line of defence against the situation they find themselves in. Lola is the more angry of the two, ready to get shit done in order to leave Hell as soon as possible. I'm immediately more interested in Milo's character development, because he seems like a bit of a doormat.

Hell is a vibrant place, illuminated by the neon signs of its bars and coloured light spilling out into the night, but it doesn't demo well. *Oxenfree* was a bit of a slow burn, my interest building as I got more invested in its characters, and I reckon *Afterparty* will be the same.

In the demo there's no way to tell yet how big the influence of different drinks on your conversations will be, or if escaping really is as simple as being good at holding your liquor. Night School Studio has already teased the existence of side missions and several possible endings. I'm eager for everything that comes with a truly memorable night out, even the awkward moments of drunken honesty.

Malindy Hetfeld

HELL IS A VIBRANT PLACE, ILLUMINATED BY THE NEON SIGNS OF ITS BARS

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PREVIEW

El Hijo

You can sneak away while the adults shoot each other.

NEED TO KNOW

RELEASE
TBA

DEVELOPER
Honig Studios

PUBLISHER
Handygames

LINK
www.elhijogame.com

EL HIJO

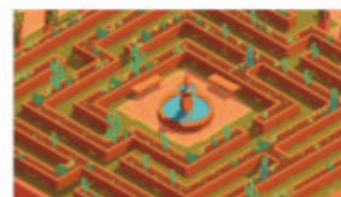
The longest game of hide and seek ever

The Wild West is a hard place. An unnamed boy, only called *El Hijo*, has to learn this lesson at just nine years old when bandits destroy his home and his mother's farm. Left with no way to care for her son, the woman leaves him at a monastery.

PLAYED IT

Of course *El Hijo* objects to being left like that, and promptly plots his escape. The task is seemingly simple – get out of this strange place and back with your mother. However, a monastery in the middle of nowhere seems huge to a child, and this one is also particularly well-staffed. The only way is the quiet one.

El Hijo takes place in three environments: the monastery, a saloon and the desert between them. It's a seemingly short journey, but each of these settings is divided into ten levels. The longer I look around in each, the more there is to see. The levels look like toy boxes, self-contained wonderlands I would



happily hang as art on my wall. The careful play between light and shadow doesn't just look incredibly good, it's also vital to you getting around undetected. As long as you stick to the shadows and don't get too close to an adult, they can look right in your direction but won't see you.

TRUE KID

The setting isn't arbitrary. *El Hijo*'s developer Jiannis Sotiropoulos was inspired by *El Topo*, a 1970 acid western in which a young boy named Hijo gets left behind by his father in a similar fashion. Despite what games may often suggest, harsh conditions don't immediately turn children into adults – in *El Hijo*, the boy gets to be a boy for a little while longer, including all the puddle splashing and

sweet pinching that entails. This isn't a childish game – it's stealth mechanics are on par with any other title of the genre – but it carries the spirit of a good time thanks to environments bathed in sunlight and knobby cowboys and monks that don't appear half as threatening to me as they do to *El Hijo*.

El Hijo is completely non-violent. You can hide behind large objects, in vases, in laundry baskets, behind curtains, you name it. In the demo I played, there was always a nice little 'aha' effect as I discovered how to make use of new hiding spots. You can take different paths or sometimes avoid hiding altogether if you're quick enough. When things get particularly crowded, there's also the option to throw a previously collected stone or even a toy. Thanks to plenty of save points, getting caught never becomes unduly punishing. Wanting to explore a new environment or part of the level just to see what it will look like and what obstacles wait for you is a major driving factor that made my time with *El Hijo* pass very quickly.

Malindy Hetfeld

IT'S STEALTH MECHANICS ARE ON PAR WITH ANY OTHER TITLE OF THE GENRE



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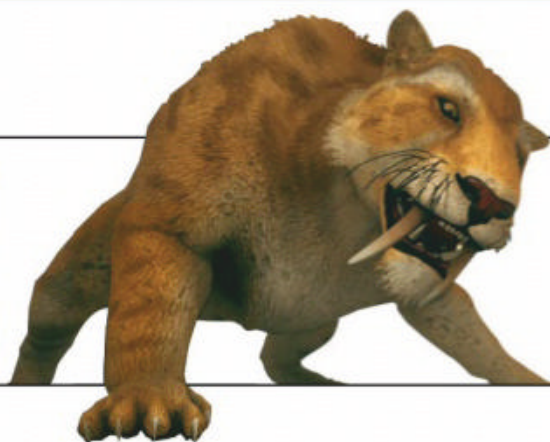
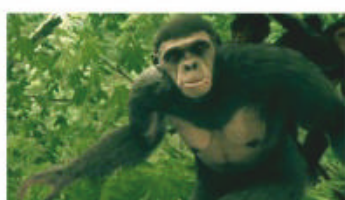
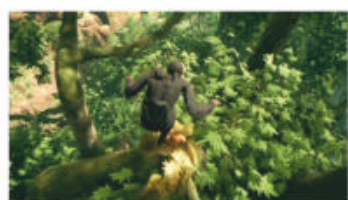
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SCAN^S

PREVIEW

Ancestors: The Humankind Odyssey



NEED TO KNOW

RELEASE
2020

DEVELOPER
Panache

PUBLISHER
Private Division

LINK
www.ancestorsgame.com

ANCESTORS: THE HUMANKIND ODYSSEY

A survival game set 10,000,000 years in the past

A *ncestors* is the first game from Panache, a Montreal-based developer co-founded by *Assassin's Creed* creator Patrice Désilets. It features a historical setting and climbing large, vertical environments, but the twist here is that the game is set 10,000,000 years in the distant past. You don't play an assassin, you play as an ape. And you aren't climbing buildings in ancient cities, you're climbing vast prehistoric trees.

"It all started from the need to build up a toolbox for a brand new studio," says Désilets, who worked on *Prince of Persia: The Sands of Time* and the first two *Assassin's Creed* games with Ubisoft.

"People say I'm the historical open world guy, right? But, really, what I do is create characters who interact with 3D worlds.

"The Prince in *Sands of Time*, he runs on walls and swings. With Altair and Ezio from *Assassin's Creed* it's all about the climbing and interacting with large crowds. This is really the core of my craft, and for this new project I needed a character who could interact with a 3D world in an interesting way."

One night, Désilets says, the idea to set a game in a prehistoric setting came to him in a flash. "This would be easier for the new studio, because we wouldn't have to build a city or a society, or have the player interact with technology," he explains. "It would just be this character in a primitive, organic environment. But we soon realised that organic isn't easy at all. It's just as hard in some ways. You can't have any hard edges."

Ancestors is a third-person survival game set in an open world. You begin as a relatively primitive ape, but over the course of the game you evolve, figuring

out how to use tools, or even something as basic as using both hands at once.

As you play neurones are fired in your ape's brain, which acts like an upgrade tree. And you learn by doing, developing new social skills by interacting with other apes, or new motor skills by picking up and experimenting with objects such as sticks and rocks.

To give you an example, when I first climbed a tree and found a coconut, I couldn't do anything with it. My ape just stared dumbly at the thing. But then, later, when I developed the ability to use both hands, I was able to pick up the coconut in one hand, and a rock in the other, and smash it open.

When I figured this out I felt like that ape from the beginning of 2001: *A Space Odyssey* when he figured out how to use a bone as a club. I could almost hear Also sprach Zarathustra playing. It felt great.

"I was bored of the whole 10,000 BC thing," says Désilets. "People going around in animal skins and swinging clubs. So I looked back further, to 10,000,000 years in the past. Let's be that ape in the tree who came down and stood up. That's a pretty cool fantasy, right? We still have this instinct buried in the back of our minds as humans, so why not play it?"

"I read books on paleoanthropology. I was following the timeline and the science, about how we became bipedal, and we designed the game around that journey. Originally it was episodic because I didn't have a lot of money, so it would have to be a shorter game.

"But then Private Division came in and said forget that, we'll give you enough money to make the game you want."

LEARNING AND EVOLVING

I played two hours of *Ancestors* and I spent most of that session feeling confused, like I was fumbling around in a dark room for a light switch.

The game is stubbornly reluctant to telegraph how any of its systems work. But this is, as far as I can tell, by design. It's ➤

PLAYED
IT

OVER THE COURSE OF THE GAME YOU EVOLVE, FIGURING OUT HOW TO USE TOOLS

Ancestors: The Humankind Odyssey

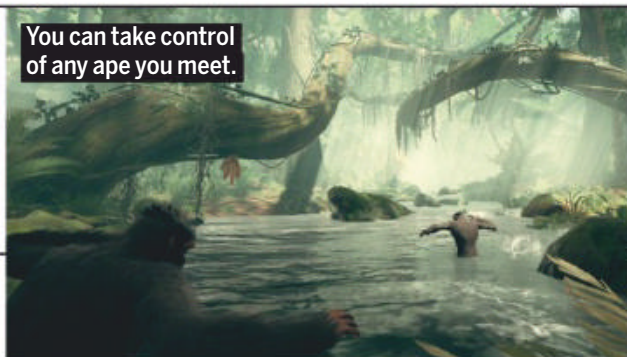
You can take control of any ape you meet.



PREVIEW

Ancestors: The Humankind Odyssey

You can take control of any ape you meet.

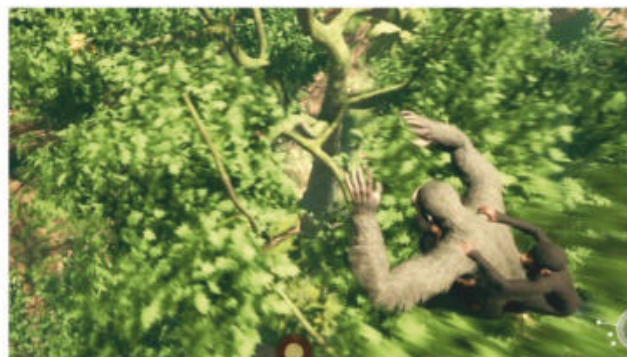
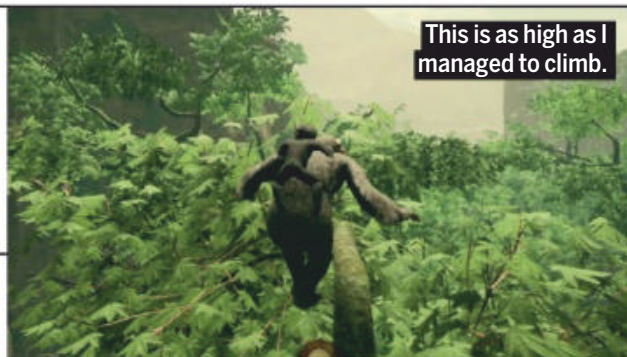


Mate with other apes to grow your family.



Eventually you'll learn to fight back.



Ancestors: The Humankind Odyssey

➤ seemingly opaque on purpose, forcing you to use your primal instincts to figure things out. I like this in theory, but I think it could do with a *little* more in the way of hints about how exactly things work, just to ease new players in.

Admittedly, when I did figure something out the satisfaction was immense. When I speared my first fish in a river with a pointy stick I felt like the smartest ape alive. And when you achieve something like this, it contributes to your evolution, and you can try and advance to the next evolutionary epoch at any time – although you'll be held back for any mistakes you make.

I fell off a cliff while trying to scoop honey out of a beehive, and I think that set my evolution back quite a bit.

"It's all about you, man," says Désilets. "You decide how you want to evolve and how fast. *Ancestors* is a game full of systems that talk to each other, and you go and you create your own experiences through those systems. Even if you can see the Matrix like I do when I play every day, unexpected things can still happen. This big ape is inside you. It's all there!

"Somehow, we are ready to survive in the jungle. It'll be tough, but it's in us. In the first prototype the game was more explicit about telling you what to do, but now you have to figure stuff out by yourself. And when you do, it's an epiphany moment. It really is.

"Our job as game makers is to ensure anything a player thinks, or any idea they come up with, is accommodated by the game. But we're walking a line. Are we saying too much or too little?

"At this early stage it needs refinement, but it's a conscious decision for people playing this game to rely on their instinct. Some players probably will bounce off it. But I'm not worried about that. Some people don't like The Beatles, you know? When it comes to creative projects you can't please everyone."

CONFOUND EXPECTATIONS

I ask Désilets if making a unique, slightly bizarre game like this is easier now than it was back when he worked on the first *Assassin's Creed*. "I don't need to sell 25 million copies to make a buck these days,"

BIOLOGICALLY WE'RE WIRED TO SURVIVE A HARSH ENVIRONMENT

he says. "That helps! But people tend to forget that the first *Assassin's Creed* was pretty out there too. I mean, I made a game about the Crusades, politics, religion, and one that was also set in the future and was a science fiction story. Even with *Sands of Time*, Ubisoft had us in a small booth to the side at E3. They were like, 'What the hell is this game?'

"I'm not a good game designer," he continues. "I do my thing, and it takes a while for it to make sense. In *AC1* you sit on benches and you walk in crowds, man. It's not a game about running around killing people with hidden blades. There's some really intense dialogue in there. People tell me it taught them things about life. Last year a game designer told me that *Assassin's Creed* inspired him to get into the industry, and he described it as a Trojan horse, and he was totally right.

"You have the word 'assassin' in the title, but people forget the 'creed' part. Players come in thinking, cool, I'm gonna be an assassin! Then they realise that it's a bit deeper than that. We trick them. And it's the same with *Ancestors*. We're still those big apes, but now we're in a controlled environment. Biologically we're wired to survive a harsh environment, but now that doesn't really exist. So we invent a harsh environment."

"There are no leopards running around. But we have anxiety and we have this [points to his stomach] because when we get some sugar, our brain tells us we need more, because you never know when you won't have it. That's the primitive brain at work. We don't have to hunt, we just go to the grocery store, and that's not good for us, man! It's not all about these deep themes, though. Playing as an ape is just fun. But they're there."

Ancestors isn't out till next year, and it's clear it still has a way to go in terms of polish and communicating its systems to the player. There are, at least, some early tutorial missions to illustrate some of the basics, including using your sense to detect smells and sounds. This ability lets you sniff out fellow apes, dangerous animals and landmarks that can be settled. I also found the tree-climbing a little clunky and frustrating, especially when I'd fall to the ground, break my legs, and have to limp around or sleep until they healed. But I can't fault its imagination, and I've never played anything like it before. Désilets is wildly passionate about the project and I think with some refinement, it could be pretty special.

Andy Kelly

ANIMAL

M

T

he next game from Frontier, the creator of *Elite Dangerous* and *Planet Coaster*, is a zoo simulator. It makes sense, really. The developer has created zoo management games in the past, and it feels like a natural extension of the *Planet* series. But *Planet Zoo* it's a very different game from *Planet Coaster*, with a focus on caring for animals, ecology, and preservation over the immediate, gut-churning thrills of a theme park.



ALL ABOUT AGING

Design and manage your own zoo, and care for amazingly realistic animals in Frontier's next big game, **PLANET ZOO**.

By Andy Kelly



“They both have a lot in common,” explains Piers Jackson, *Planet Zoo*’s game director. “They’re both part of the same *Planet* franchise, of course, but we have a very different focus here. *Planet Coaster* has a heavy engineering focus, on rides. But here we have a heavy welfare focus on the animals. That’s really where our simulation is grounded. Creating the most authentic animals we can, getting the player to look after them.”

You have total freedom when it comes to designing your zoo, building habitats, decorating it, and filling it with animals. Like *Planet Coaster* there’s a vast Lego set of bits-and-pieces to slot together, letting you create any zoo you can imagine. Then you can choose which animals to populate it with, and even breed your own. The game also has a strong conservation message, reflecting the real-world importance of giving these creatures happy, fulfilling lives, not just exploiting them for financial gain.

“Animal husbandry is core to any modern zoo, and some of these zoos are doing a fantastic job in that regard,” says Jackson. “We’ve spoken to zoo keepers as part of our research on this project, and they are there for the animals. They’re trying to repopulate the wild wherever they can. That’s something we very much wanted to reflect in *Planet Zoo*.”

Jonny Watts, Frontier’s chief creative officer, also has a vested interest in *Planet Zoo*, because he has a degree in zoology. “I was making computer games back when I was doing my A-levels,” he says. “I was a bedroom coder. I’d go home after school and make games, and my mum would warn me that I’d never be able to make a living from it.

“So I took her advice, went to university and studied zoology, and I really enjoyed it. But I moved into computer science and, well, the rest is history. If I had to put my love of zoology down to one moment it’d probably be the first time I watched David Attenborough’s *Life on Earth* documentary series, back when there were only three TV channels to choose from.”

Watts has worked on several other zoo simulations, but *Planet Zoo* is the game he always wanted to make. “I worked on *Rollercoaster Tycoon 3*, which had a zoo component,” he says. “I also worked with Microsoft on *Zoo Tycoon*. That was a decent game. The animals looked good, but I wanted it to have more depth.

“We just didn’t have time. So *Planet Zoo* is really the animal management game I’ve been wanting

to make for 15 years, and being self-published means we can make the game we want.”

Just as the *Planet Coaster* team spent time at real theme parks, speaking to the people who design and run them, the *Planet Zoo* team has consulted with zoos in the same way. “I can’t name drop, but we have spoken to zoos,” says Piers Jackson. “We’ve visited them, spoken to the staff, vets, keepers, and management. We’ve immersed ourselves in it. It’s important that we understand the inner workings of a zoo. We have people working in the company with experience of it, and we’ve consulted with researchers who’ve given us large amounts of information about the animals. So really there are many approaches we have when it comes to authenticity.

“Attention to detail is almost an obsession at Frontier. Grounding things with a scientific background is what we do best, whether it’s mapping a galaxy or making the most authentic rollercoasters down to the nuts and bolts.

“Or in the case of *Planet Zoo*, making sure the zoo the animals are part of is representative of what a modern zoo stands for, and that conservation and husbandry are catered for properly.”

“A streak of authenticity runs through all our games at Frontier,” says Jonny Watts. “I’d love it if people were inspired by them to pursue a career in zoology or astronomy, the same way *Life on Earth* inspired me to study zoology. Our games are fun, but there’s always a message in there. Not an overt one. But enough to inspire people, I hope.”

“We have to make sure *Planet Zoo* abides by the principles of the *Planet* franchise,” explains Watts when I ask him about what his high level goals for this new game are. “It’s all about this deep, piece-by-piece construction, giving people the tools to create anything they can possibly imagine. We have this Lego philosophy where it’ll take you time to build something, but when you do it you really revel in your achievement.”

BEAST MASTER

The stars of *Planet Zoo* are undoubtedly the animals. They’re probably the most convincing, lifelike creatures I’ve seen in a game, with incredible fidelity and nuance of animation. When they move they have weight and presence, and you can see the muscles and bones moving under their skin. Zoom the camera in and you’ll see their noses twitch and their ears flap.

The idea, Frontier says, is to make you really care for the creatures in your zoo, so you don’t just think of them as expendable exhibits.

MEET THE TEAM

Some of the developers behind Planet Zoo



JONNY WATTS CHIEF CREATIVE OFFICER

Watts oversees all of Frontier’s games, but having a zoology degree, he has a special interest in *Planet Zoo*. One of his goals is making the studio’s sims deeper for the hardcore, but more accessible as well.



PIERS JACKSON GAME DIRECTOR

Piers is in charge of the overall vision for *Planet Zoo*. He’s a champion of authenticity, and has spent time researching (and visiting) real-world zoos to see how they operate, and how the animals live there.



CHRIS MARSH LEAD ANIMATOR

Marsh, along with principal programmer Ollie Powell, is responsible for making the animals in *Planet Zoo* move realistically. He combines hand-crafted and procedural animation to impressive effect to achieve this.



LIESA BAUWENS SENIOR ARTIST

Working alongside Fearn Hilborn, a fellow senior artist, Bauwens is responsible for creating the aesthetic of *Planet Zoo*. She has created themed sets of decorative items to give your zoo a consistent appearance.



JIM CROFT HEAD OF AUDIO

Working with lead audio designer Matthew Florianz, Croft is involved in all aspects of sound design in *Planet Zoo*, from the general ambience of the zoo itself, to the calls and movement sounds of the animals in your zoo.





FAR LEFT: To keep your hippos happy, make sure there's plenty of water in their enclosure.

LEFT: Animal husbandry is an important part of running a zoo.

**“WE HAVE TO MAKE SURE
PLANET ZOO ABIDES BY
THE PRINCIPLES OF THE
PLANET FRANCHISE”**

**“WE WANT THESE
ANIMALS TO FEEL
LIKE THEY’RE
IMPORTANT TO YOU”**

FAR RIGHT: Some animals don't like bad weather. But these bears don't mind a bit of rain.

RIGHT: Wolves thrive in snow, but lions would have a hard time adapting.





» “We want these animals to feel like they’re important to you, that you do need to look after them and care for them,” says Piers Jackson. “And we have seen these attachments grow. One team member followed one of his elephants through a full life cycle, and it was distressing when it died. That’s a really cool moment. A real bond. The work of the team, be it the character modellers, the animators, or the guys doing the AI, has come together to create something that people are really invested in.”

“When you move the camera under a ride in *Planet Coaster* you can see all the workings and mechanisms, and we’re taking the same approach to the creation of the animals in *Planet Zoo*,” adds Jonny Watts. “We always go that extra mile to achieve a high level of fidelity at Frontier, and this is no different. We think *Planet Zoo* players will appreciate this.”

“When it comes to animating the animals, it’s not just about making sure they move right, but that we capture something about them,” says Chris Marsh, lead animator.

“We took trips to a few zoos and collected a lot of our own reference material. I wanted to know how they feel when they’re in a habitat, and existing together as a family unit.

“You can make the weight and animation timing perfect for a single creature, but when you drop five of them into an enclosure they need to interact believably. Even if you don’t notice these details, you feel it, and you’d notice its absence. One of the beautiful things about animation is that someone won’t be able to articulate exactly why they’ve responded to a particular animation. They’ve just believed in it, and those little ear flicks and nose twitches add up to create the feeling that they’re real animals. Our job is making people believe and buy into that.”

But if a management game is going to challenge the player, there needs to be moments where things go to hell. You don’t have to worry about guests being eaten by lions here, though. An escaped animal will cause a panic, but no blood will be shed, unlike Frontier’s other ‘zoo’ sim, *Jurassic World Evolution*. But there’s still plenty that can go wrong, forcing you to step in and deal with the crisis, spinning the appropriate plates.

“There’s the welfare of the animals, whether you’re building the right habitats and if they’re big enough,” says Piers Jackson. “You also have to be able to breed these animals effectively to increase their population.

“You have to provide enrichment for them to fight off boredom, give them the right food, research them, prevent them from getting diseases.

“In any simulation management game you have to allow people to do things badly. People have to be allowed to fail or push the simulation in a way that you didn’t intend. And there can be consequences to that. Creating a habitat that isn’t good for an animal will have a negative impact on its wellbeing and the guests. But I think people will find ways of creating successful habitats that we haven’t thought of, and that’s part of the joy of making a customisable game like this.”

“Running a zoo is all about making sure the animals are well cared for, and that’s really the core of *Planet Zoo*,” says Jonny Watts. “You have to make sure the habitats have the correct biomes and temperatures. But there’s also a whole other area called enrichment. This means things you put into the habitat to stimulate the animals and break up their day, or recreate experiences they would have if they were in the wild. You’ll have emotional highs and lows. When an animal dies it also affects the economy. Money stops coming in, which is an important gameplay mechanic. It works on two levels, emotional and financial. If a ride breaks down in *Planet Coaster* you can send the engineers to fix it. But you can’t bring a dead animal back to life. That’s a beautiful bit of destruction and, from a pure gameplay perspective, a great ingredient for the simulation. And from that you get this emotional ebb and flow.”

OUTSIDE LOOKING IN

Enrichment items include scratching posts, which when placed near a viewing window will give the guests a massive satisfaction boost when a lion starts clawing at it. You can also toss giant footballs into the elephant enclosure for them to knock around. But if you want to protect the animals’ privacy, you can spend a little more money on one-way glass. They won’t appreciate crowds of people gawking at them all the time, and this will help to encourage them to play with an enrichment item.

Each animal in *Planet Zoo* will have its own distinctive personality and temperament. Also, to reinforce the idea of them being individuals, the patterns on their bodies will even be different. The stripes on a zebra, for instance, »

CREATURE FEATURE

All the animals confirmed so far

- ✓ African Elephant
- ✓ Grey Wolf
- ✓ Grizzly Bear
- ✓ Hippopotamus
- ✓ Plains Zebra
- ✓ Reticulated Giraffe
- ✓ Ring-tailed Lemur
- ✓ West African Lion
- ✓ Western Chimpanzee
- ✓ Indian Peafowl
- ✓ Brazilian Wandering Spider





are randomised. And if an animal gets into a scrap it'll pick up wounds that will, over time, develop into scars and stay there for the rest of their life. Details like this help to make the creatures under your care more than just assets to earn money – although this being a sandbox game, if you want to treat them that way, you can. You monster.

“An animal will be born and you'll see it grow and reach old age, and you'll definitely feel a sense of ownership there,” says Chris Marsh. “What we have to do, as animators, is make sure their health is readable.” An example of this is that, when an animal is sick, its body language will change. Its head will droop or its walk cycle will be more laboured. The *Planet* games are all designed this way, so you can pick up things without relying on the HUD. Players will even get to know what a particular animal call means, immediately identifying if a specific creature is in distress.

“In our games, you can pull the camera up a mile into the sky and scan your habitats,” says Marsh. “So I think you should be able to tell what's wrong with them from there, and not just when the camera is up close. But being able to zoom in justifies the detail we put into incidental animations.”

These random animations include a pair of lion cubs rolling around and play-fighting, and elephants locking tusks. Animals won't always get on, and some species won't play nice with others.

If you put a load of lions in a habitat with a herd of zebras, you're gonna have a bad time. I tell Marsh that the animals I've seen are some of the most convincing I've encountered in a game, and he explains that this one of the most important goals Frontier is striving to achieve. “We don't want the animals to feel like these thin shells,” he says. “The bear is a great example of how we've made these creatures feel big and heavy.”

ALL TERRAIN

As well as certain things being animated by hand, there's also a procedural element to animal movement in *Planet Zoo*. Because a player can create any kind of terrain, a procedural animation system comes into play, meaning they'll move realistically over any land formation you happen to put in front of them. Marsh shows me a demo of this in action, manipulating the ground as one of those bears moves along it, and I'm impressed by how the hefty beast navigates the terrain without missing a beat.

“The guests have needs as well,” says Piers Jackson. “Above all, they have to see the animals. If they don't get a good view then there'll be a negative reaction. But the animals aren't meant to just sit there and be looked at like they're in a shop window. So there's a management tension in the game where you're making sure your habitats are good for the animals, but also making sure the guests can get a good look at them.”

“Pathing is also important, because you need to create an efficient network for your keepers to restock food and so on,” adds Jonny Watts. “If they're miles away from an animal, or the path there is too complex, they can go

PARK LIFE *How to build a successful zoo*



1 Using the landscaping tool you can place grass, sand, rocks, and other types of terrain in habitats, but you can't just do what looks nice. You have to consider what kind of environment each animal likes.

2 Paths are important, because not only do your guests need to actually see your animals, but the keepers need a clear, efficient route between the habitats to keep them clean and the animals fed.

3 You'll need other forms of entertainment to keep your guests happy, including places for them to spend money: restaurants, gift shops, and so on. Better make sure you have plenty of toilets too.

4 This water is filthy, which means you either don't have a nearby water purifier, or it's broken down. While some animals don't mind dirty water, your guests won't be able to see them swimming in it.

5 You can build a railway and a tiny steam train to carry visitors around your zoo. This is quicker than walking, but it also provides a happiness boost, because, well, who doesn't enjoy riding on a tiny train?

hungry. Your paths also have to offer places for the guests to get a clear view of the animals, as well as effortlessly guiding them between habitats in good time.

“We want everything you do in *Planet Zoo*, from a creative point of view, to affect the management simulation too in some way.”

At first glance, *Planet Zoo* seems a lot more low-key than *Planet Coaster*. It's not as noisy and colourful, which I suppose makes sense considering zoos are genuinely more chill places. I ask Piers Jackson if they intended the game to be more understated. “We've put a lot of effort into our foliage,” he says. “The planting of trees is really important to the habitat creation, which gives the game a realistic, organic feel. But players can still create outlandish things. We still have the full piece-by-piece building set, and we'll have a whole new set of elements for people to create with. I'm seriously hoping, and expecting, our community to wow us with the things they build.”

But rather than just throw animals into *Planet Coaster*, Frontier is using this new game to refine the core of its particular style of management game. “We're always trying to make our games better,” says Jonny Watts. “The next step in the *Planet* franchise is working even harder at making it

deeper for the people who like that, but more accessible for others.”

FEEDBACK LOOP

Frontier is known for its close relationship with the people who play its games, most notably *Elite Dangerous*, which is always adapting to the needs of its playerbase. “We're always listening to the community and absorbing the feedback,” says Watts. “We take it on the chin when we need too. If you want to just put a few animals in a zoo and watch them, that's cool. But if you want to extract more from the game and uncover its complexity, you're going to have to work a bit harder and learn the systems.”

Planet Zoo is shaping up nicely. What impressed me most, I think, was the animal tech – both the AI and the animation. They really do feel alive, and there was something relaxing about hovering over a habitat and watching them go about their business, swimming, eating, socialising, and occasionally, you know, pooping. There's a lot in the game I've only seen glimpses of, including glass enclosures that you can house snakes, reptiles, and insects in. And, if previous Frontier games are anything to go by, you can expect new features to be added long after its initial release. ■



FAR LEFT: Zebra stripes are random, which makes them look like more than just clones.

LEFT: Some animals will herd together. Others prefer to be left alone.

WHAT IMPRESSED ME MOST, I THINK, WAS THE ANIMAL TECH – BOTH THE AI AND THE ANIMATION



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WHEN CHRIS WILSON WAS CALLED A NOOB IN HIS OWN GAME, **PATH OF EXILE**, HE KNEW IT WAS GOING PLACES. BEFORE THE GRINDING GEAR GAMES CO-FOUNDER HAD GONE TO BED, ON THE FIRST NIGHT OF PATH OF EXILE'S CLOSED ALPHA TEST, HE WAS RUNNING THE HIGHEST LEVEL CHARACTER IN THE GAME. WHEN HE WOKE UP, HE HAD THE PRIVILEGE OF BEING INSULTED BY THE PLAYER WHO DEPOSED HIM.

By Jeremy Peel

DEVIL'S PLAYTHING BY VALENTINE

The thing we were worried about with our closed alpha was whether or not people would actually keep playing overnight,” Wilson recalls. “This was basically us inviting our friends and family to play, and they’d play for a few hours to humour us. But if this person was willing to call in sick the next day and not go to work because he could be the number one player in the world in this upcoming action-RPG, which was his goal, then we had something.”

Back then *Path of Exile* fizzled out in the prison sequence of Act One. Now, several years of free expansions later, it’s one of the best value PC games around. That initial player vigil turned out to be the first act of worship for a fanbase that now plays the action-RPG in the hundreds of thousands. But Wilson and his team

almost didn’t make it. Success nearly killed *Path of Exile*.

Like the exiles arriving in Wraecast, Grinding Gear Games had to bring about order where there was none. The handful of established studios that existed in New Zealand at the time were not in contact with the five friends working out of Wilson’s garage. Potential hires would arrive in suits, and be walked past the embarrassed team’s laundry for their interviews. There was a budget, but it was tighter than the tighty-whities.

“Our goal was to be smart,” Wilson says. “We wanted from the beginning to write code that could do the work, rather than put people on it. We planned, for every asset we made, to use it five different ways. We made sure that we leaned heavily on random item generation and monster properties. We wanted to write our networking code once and get it right.”

Frugality shaped the initial version of *Path of Exile*. Meanwhile, in California, another team was working on a rival action-RPG with a far larger budget. “I met one of

BOTTOM: There’s a reason they don’t make armour out of gold, but what a status symbol!

my two co-founders playing *Diablo II* online,” Wilson says. “There had been no *Diablo* game for six years at that stage, no sign of anything on the horizon.”

HARDCORE ACTION-RPG

When *Diablo III* was announced, it was a cause for alarm – but Wilson and his team found solace in humongous shoulder pads. That *World of Warcraft*-like touch to Blizzard’s barbarian class reassured Grinding Gear that its chief rival was taking the genre-dominating series in a more accessible direction. In doing so, Blizzard had unknowingly left space for a gothic, hardcore action-RPG from New Zealand. It was the first potentially fatal blow *Path of Exile* had dodged.

“If they had made *Diablo III* as a very direct *Diablo II* sequel, I suspect the timeline would have gone quite differently,” Wilson says. “But thankfully, that differentiation meant

**THERE WAS A
BUDGET, BUT IT
WAS TIGHTER
THAN THE
TIGHTY-WHITIES**



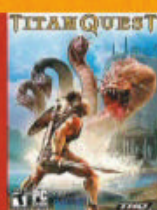


DIABLO-NO *Action-RPGs for the Blizzard-averse*



DUNGEON SIEGE III

An unexpected sequel handled by Obsidian, who deepened the series' world and killed the mule.



TITAN QUEST

Still shining under an ancient sun, after a remaster that buffed out the kinks in its helmet.



DEMON STONE

A Forgotten Realms riff on the *LotR* games, with cameos from Salvatore's most famous characters.



TORCHLIGHT II

A pacy take on the classics that kept loot fans sated during the fallow years of the genre.

that we had a slice of the market that we could explore and double down on."

In the years since, *Diablo III* has not only survived a disastrous launch but recovered the series' reputation. Yet Grinding Gear has discovered that life isn't so bad in the shade cast by its looming genre mate.

"The effect we noticed was basically that every time we were mentioned in the media alongside *Diablo III*, it had a large positive impact on us," Wilson says. "We've realised that in a genre like this where there's a heavyweight able to get a lot of marketing for its own games, it's a rising tide that lifts all ships. And if Blizzard eventually announces another product in that franchise it will probably be good for all action-RPGs, because it will bring attention back onto the genre."

Grinding Gear made *Path of Exile* public for a weekend during *Diablo III*'s launch to drum up interest – and in early 2013, they began open beta. After running the game with a few thousand paying players, the studio didn't know how many would show

up on the shores of Wraecclast now the game was free-to-play. "This was the scary point," Wilson says. "We knew it could be a lot more – potentially tens of thousands."

In the event, nearly 80,000 testers played concurrently. It was the outcome the studio had hoped for, and it was horrendous. Support tickets flooded in as server problems emerged, fielded by just 20 developers at the time.

"It turned to hard mode immediately," Wilson says. "Because now we're expected to run a full-on games-as-a-service thing. Nowadays, we have dozens of people that handle all that stuff to make it seamless. But it's tricky to decide to expand before you need it, because that feels like wasting money at the time."

Staffing up wasn't a simple process. With a lack of experienced developers in the local area to pull from, Grinding Gear would have to make time to train new hires – time it no longer had. "There were a lot of sleepless nights and learning the hard way," Wilson says, "as you do when the servers just keep crashing"

REAL-TIME STRATEGISING

The exhaustion is still audible in Wilson's voice when he talks about that period in *Path of Exile*'s history. His life felt a little like an RTS – how could he spend his limited resources in order to save Grinding Gear HQ from being overwhelmed? If the team didn't develop the game fast enough, the players would leave. If it crashed too often, the players would leave. If support couldn't reply to customer tickets fast enough, or there was a community disaster the team didn't address, the players would leave.

TOP: Those orbs in the UI take you straight back to *Diablo II*.

EVENTUALLY GRINDING GEAR'S ENEMY HAD A NAME: DESYNC

» “Trying to tackle all the problems at once, with constrained resources, and also still sleep when there’s an eight hour period where we’re not able to solve those problems? It’s an interesting physiological challenge,” Wilson says.

Eventually Grinding Gear’s enemy had a name: desync. When the studio had built *Path of Exile*, it had plumped for a predictive networking model. Every time you attacked an enemy or moved an item, the game checked in with the server to make sure you weren’t cheating. And in the meantime, your PC assumed the check had worked – allowing you to hack and slash as if you were enjoying a single-player game, with no lag. This step was particularly important in the early years of the game, when servers were further behind than Grinding Gear would have liked, leading to slower checks.

The problem arose when your PC drifted out of sync with reality as the server saw it – leaving you unable to trust what you were seeing on your monitor. Advanced players in particular were constantly out of sync in ways that endangered their characters as they zipped back and forth across the screen.

For a long time, if you saw a positive comment about *Path of Exile*, it was often accompanied by a reply in which someone would bring up desync. “It became the thing where, if there was a good Reddit thread about *Path of Exile*, half the users were loving it and the other half were saying, ‘I quit because of desync,’” Wilson says. “It

TOP: Please wear safety gloves when you’re wielding the molten axe.

BELOW RIGHT: Avoid standing near open flames when you’re spellcasting.

was a game-killing problem from that point of view.” Even as the game grew in size and strength, the team worried that one day, the albatross around their necks would sink them.

“That problem plagued us for years,” Wilson says. “The way to solve it involved a lot of math, months of work, and a whole team. Thankfully it’s a thing of the past – I haven’t seen a player mention the word in more than a year.”

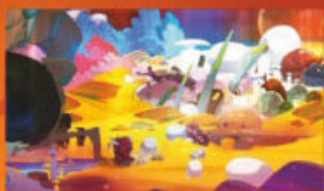
Grinding Gear finally banished desync with the release of *Path of Exile 2.0.0* in 2015. Now Wilson worries about how often he sees

players complain about clunky combat animations. “It’s true that we have a complete redo of all that stuff coming, but again, it’s a long-term project slated for next year,” he says. While running a live game, there’s no plateau the studio can climb to that truly allows them rest. The grind never ends.

That fact is reflected in the rigorous update cadence the studio has devised for the game. “Prior to 2015, and this isn’t something I’ve talked about a lot publicly, but our releases were not growing the overall community,” Wilson says. “We



EXILES ON FILE *PC gaming's most punishing banishments*



PYRE

If your path to redemption is a game that basically resembles Quidditch, is it even exile at all?



BANISHED

Made bearable by the number of exiles in one place. They're your resources, but don't let them hear you say that.



MORROWIND

You're technically freed from prison, but into a realm where the only colour you'll ever see again is brown.



DISHONORED 2

Occasional queen Emily Kaldwin spends less time on her throne than fighting to get back to it.



CONAN EXILES

The original barbarian saves every player character in this game, but fails to provide aftercare in a harsh world.

released the game and each of the expansions we released did OK, and sometimes went up and sometimes went down. The money was great, and it was awesome to have made a successful game. But at the same time, it wasn't growing."

Grinding Gear's angel investors, who had helped fund the game, weren't applying any pressure. And so it became a question for the studio itself to answer – did they want to try and be the next *League of Legends*, and how would they achieve that if they did?

If you've logged into Steam anytime in the last three years, you'll know that not only did Grinding Gear decide to take over the world, but that it's succeeding. Since the team adopted a rigid 13-week schedule, they've seen a 20 per cent increase in players with the release of each league – *Path of Exile's* take on *Diablo's* seasons. It's a reversal of the industry standard, in defiance of the trajectory that even the likes of *World of Warcraft* has suffered.

"*Path of Exile's* been out for about six years and we're still seeing new records," Wilson says. "Our highest month was December. We're expecting to see more records broken in the next couple of years, especially

with the massive 4.0.0 coming out next year."

The swift turnover on expansions has helped, paradoxically, with keeping hold of the staff the studio so desperately needs – Grinding Gear is still something of an island as a PC game developer in New Zealand.

"We want people to be constantly working on varied stuff," Wilson says. "We make sure they have mobility within the company, and that every moment of overtime that's asked for is both paid at a higher rate, and also seen as a management failure so that we can make sure to minimise that as much as possible."

PLAYERS' HEALTH

Perhaps it shouldn't be a surprise that an action-RPG developer can see the benefits of a commitment to staff welfare, eyeing the long-term reward beyond the immediate grind of the next expansion milestone. It's heartening to learn that several of Grinding Gear's staff have been around for more than a decade, and that all of its founders are still with the company. "People are seeing it as a lifelong commitment," Wilson says.

What is surprising – in that I've never heard a game developer ever mention the concept before – is that the studio is starting to consider the long-term impact of the game on their players' lives as well.

"Some of our players put in a lot of hours each day – eight, ten, 12 hours," Wilson says. "And that often comes at the expense of their real-world progress, right? Because of this, they're potentially even unhappy about their achievements in the real world. So it's very important that they can feel incredibly good about the fact they've achieved so much cool stuff within our game."

It's for that reason you don't see as much power inflation in *Path of Exile* as in some comparable MMOs – where you might find a beginner weapon in a new expansion that makes the one you spent hundreds of hours raiding for look a bit silly.

"People talk about how it feels satisfying to shatter a whole screen of enemies at once," Wilson says. "But a lot of our core designers want the real satisfaction, deep down, to be that you found something awesome that you can then go home and load up on your screen and look at. You're able to trade it to someone else if you want to, but you don't want to because it's yours, but you could give it to them, but you're not going to. *Path of Exile* players are heavily, heavily encouraged to care very deeply about the things they've accomplished on the game."

It's a tribute to *Path of Exile's* uniquely enduring success that its studio is having to worry about where its players aren't grinding elsewhere in their lives – and testament to Grinding Gear that the studio takes the problem seriously. It didn't have to. But in Wraecclast, the only justice is the one exiles make for themselves. ■

BELOW: There's no mistaking it, this is dark fantasy.



FEATURE

Dark Souls

KEEP FLAMM BURN

THE ENDING

We celebrate the release of FromSoftware's *Sekiro* with five stories from the RPG masterpiece, **DARK SOULS**



INTO THE ABYSS

The tragedy of Knight Artorias and his loyal companion. *By Tom Senior*

Dark Souls bosses are a beautiful marriage of fiction and encounter design. By the time you find Knight Artorias in *Dark Souls'* expansion his background has already been well established in item descriptions and scraps of conversation. You know he's one of Lord Gwyn's four most trusted knights. He's an unparalleled master of the greatsword. He is

known as the "Abysswalker". Gradually you piece together the story of a loyal warrior doomed by his own unwavering determination and sense of duty. It's also a sad story about a man and his dog.

There's a chance you've already seen Artorias in cover art or imagery surrounding *Dark Souls*. It's a strong look. He hunches over and balances his greatsword across his stooped shoulders. His face is lost in a blue

hood. His shattered left arm hangs limply at his side. For *Dark Souls* players Artorias isn't just another cool knight. He's a legend, credited with destroying the corruption that threatened to overcome the land, or so it seems.

When you eventually find him in *Dark Souls'* expansion, set before the main game, he is weakened, dripping with corruption, and still fighting ferociously after years spent lost in darkness.

He makes a powerful entrance, dropping down to spear a corrupted human – proof that on some level he's still trying to complete his mission. Then the dark ooze of the Abyss starts dripping from his hood, he roars, and you realise that he's gone. In a cheery fantasy novel, Artorias might be the hero of the story. In *Dark Souls* you have to put him out of his misery.

Even weakened, with only one working arm, Artorias is a deadly fighter. He lunges and swipes with sudden movements, leaving trails of black ooze behind him. Occasionally he stops and, for a moment, seems deeply, existentially exhausted. Then a bubbling surge of Abyssal energy consumes him and, with a scream, he throws himself back into the fight.

Somehow FromSoftware's animators are able to express Artorias' torment, even as he's destroying you with brutal overhead sword strikes. Even his broken arm has story significance. By piecing together discrete scraps of lore you know one of his last acts before being consumed by the abyss. He sacrificed his greatshield to protect his loyal companion the Great Wolf Sif. You

suspect that, without it, a blow could have ruined Artorias' arm.

The Sif fight is one of the saddest encounters in *Dark Souls*. Rumours suggested that if you took Sif down to a sliver of health it would limp away and survive. It's not true. Sif defends its friend's grave to the end. When you loot the tombstone you find

TOP: The Great Wolf Sif and Artorias's greatsword.



companion. The Artorias fight is tragic because you're witnessing the corruption of a legend. But, while the game can feel relentlessly grim at times, there is a glimmer of light in the darkness.

When you defeat Artorias, you collect his soul. "The Legend that Artorias repelled the Abyss only told half of the story," says the description. "It seems that he was defeated, and his honor preserved, by some unsung hero, who is the true victor over the Abyss."

COST OF THE QUEST

As the unsung hero, you manage to complete Artorias' quest and preserve his legacy. In this moment you realise that your fate has been entwined with Artorias and Sif from the start of the game. Every fight is part of a grand time loop that allows you to complete your fight against Lord Gwyn and choose whether or not to end the age of fire.

There are deeper layers to the story that you only find discussed on the most obsessive *Dark Souls* lore messageboards, suggesting that Artorias was tricked by one of the enigmatic Primordial Serpents plotting to bring down Lord Gwynn. It's a testament to *Dark Souls'* powerful storytelling that a couple of bosses can invite so much discussion even years after the game's launch. When you look at the game as a whole his story is just one thread in a huge tapestry, but it shows how *Dark Souls* breaks ground and elevates the idea of what a videogame enemy can mean to a player. After battling Knight Artorias, bosses in other games seem thin. ■

Artorias' ring, which grants access to the Abyss. You can speculate that Sif wasn't just guarding the memory of Artorias, but trying to prevent future heroes from sharing his fate.

If you play the expansion before you meet the huge Great Wolf version of Sif, you can find it as a pup in the Abyss, and free it from Artorias' shield. If you do this the introductory cutscene for Sif changes. The wolf sniffs, recognises you, bows in sorrow, and then howls at the moon when it

realises it has to fight the warrior that once saved them.

In most games boss fights are a matter of pacing and challenge. In *Dark Souls* they are vital story beats that evoke powerful, layered emotions. Beneath the anger, frustration, fear and satisfaction of navigating combat, the fights with Artorias and Sif are deeply sad. The Sif fight is tragic because you are forced to punish the wolf's eternal loyalty to their dead

YOU SUSPECT THAT BLOW MIGHT HAVE RUINED ARTORIAS' ARM

ABOVE: The hand of Manus, the monster Artorias was meant to have killed.

BOTTOM RIGHT: If you rescue Sif from the Abyss you can summon them to take revenge in your final fight against Manus.



MISCHIEF MAKERS

FromSoftware devs are some of the greatest pranksters in game development. *By James Davenport*



Maybe you've met Kite Guy already. In the early hours of *Sekiro*, the player ascends Ashina Castle by leaping between rooftops patrolled by agile, feathered Nightjar Assassins. The first is hidden well enough to take players by surprise, a forced introduction for what lies

TOP RIGHT: Dressing up like an idiot is intrinsic to the *Dark Souls* experience.

BOTTOM LEFT: Some of the funniest characters are also the most tragic.

ahead. More Nightjars hide behind corners or below awnings in places the player will likely intuit and approach from a cautious angle, taking out the assassins silently. It feels like a victory over the game designer, but as always, FromSoftware is one step ahead.

DIVE BOMBER

Attentive players might notice the kite billowing above Ashina Castle, and they might squint and see an X printed on its surface. They probably won't know what the X marks, at least until they hear the approaching "wooooo" as a Nightjar leaps from the kite and careens toward the player like a clumsy meteorite.

Some players get hit, some dodge just in time, but if the hundreds of YouTube videos showing players' first encounter with Kite Guy are anything to go by, *everyone* smiles.

A little joke goes a long way in FromSoftware's dreary worlds. It takes a light heart to even consider pressing on through the compounded ruins of humanity's failures in *Dark Souls* or the perpetually, aimlessly warring states of Sengoku-era Japan in *Sekiro*. So FromSoftware has always fucked with its players.

Patterns in enemy placement, item and NPC behaviours, level design tricks and traps and combat are often instilled and then subverted in clever ways just as soon as the player forms habits to anticipate or counter them.

One of the biggest foes players encounter in the original *Dark Souls* is a wyvern that harasses them on their initial journey through the Undead Burg. It eventually roosts at one end of a large bridge, breathing

fire at anything that approaches. New players often assume that's it, there's no getting by. But with a bow and a couple bundles of iron arrows, it's possible to get underneath the

bridge and shoot the poor bastard's tail over and over and over again. Do this (and only this) and the Drake Sword will drop, which is an incredibly powerful weapon for the first half of the game.

Mimics, or those creepy chests with teeth, are right at home in the *Souls* series, and From frequently uses them to prank players. In the original *Dark Souls* players won't encounter a mimic until deep into the game at Sen's Fortress, long after they've built up the habit to instantly open most chests. From there, it's business as usual in *Dark Souls 2*,

FROM WOULDN'T MAKE THE VERY FIRST CHEST A MIMIC, RIGHT?



Dark Souls 2 had some pretty amusing armour.



where players learn to spot the chain patterns next to each chest that determine whether they're a mimic or not. But it always takes some time for them to show up. That is until *Dark Souls 3*, where the very first chest – From wouldn't make the very first chest a mimic, right? – the very first chest, is a mimic.

Crystal Lizards are FromSoftware's most patronising trap, comparable to the cheap thrill of finding a coin in the middle of a busy street. Because they drop valuable crafting materials (and are so very shiny), chasing the lizards on sight is instinct for gullible players. Following a Crystal Lizard into an abyssal pit or deadly ambush is From's regular reminder that we can't outpace base curiosity and avarice.

CHEEKY RED HERRING

Most cruel of all is the Pendant, an item players can choose at the start of a new game in *Dark Souls*. The item description is earnest, "A simple pendant with no effect." But because

the *Souls* games are stuffed with secrets and arcane processes, players couldn't accept that a starting item was totally useless. Players experimented with it endlessly for months, only for FromSoftware's president and creative lead Hidetaka Miyazaki to confirm that it's useless in an interview with IGN. That's one hell of a cheeky red herring.

And then there's Patches, a seemingly omnipotent prankster character that, despite his shrill laugh, always asks for the players trust only to betray them. In the original *Dark Souls*, he knocks you off a bridge. In *Dark Souls 3*, Patches kicks you into a pit with a grumpy giant. It's the same until *Dark Souls 3*'s final DLC, The Ringed City, where an amnesiac Patches steps out of his role as prankster spirit. As his memory returns, a familiar cutscene plays when he prods you towards some precariously perched treasure. But this time, the treasure is there, trap-free, and he dips before



TROLL HUNTER *Three mods that make Dark Souls absurd*



THANKS OBAMA DEATH SCREEN

The "Thanks, Obama" death screen from BeakieHelmet is certainly dated, but the joke is timeless.



FIDGET SPINNERS WEAPON REPLACEMENT MOD

Modder Abject immortalises what feels like an ancient fad in a game about the foibles of humanity. Apt.



GEORGE COSTANZA PAINTINGS IN ANOR LONDO MOD

This mod from Roboblues does what it sounds like. Why? Why not?

commenting on the cyclical nature of greed, a potent subversion and thesis for the series as a whole.

As infuriating as these tricks can be, they're reminders of the human touch behind every FromSoftware game, and that the dev team knows we're human too. They know humanity is doomed to repeat the same mistakes until our collective demise, they know From games are punishing as hell, but they also know we're suckers for the little reasons we keep carrying on, for those little glimpses of light in the dark. ■

LORDRAN CALLING

Eight interesting stories from *Dark Souls* lore. *By Joe Donnelly*

Perhaps the most interesting thing about *Dark Souls* lore is its ambiguity. Cutscenes are scant, and your main source of story signposting comes from item descriptions and vague backstories drip-fed by its NPCs.

Everything is open to interpretation, then, and in a circular world that's doomed to repeat itself, crossover between series instalments is inevitable. With all of that in mind, here's a collection of easily overlooked *Souls* lore stories, away from its mandatory bosses and central nomads.



GRIGGS OF VINHEIM AND HIS SEARCH FOR BIG HAT LOGAN

Griggs of Vinheim – trapped in the Undead Burg and packing an array of sorcery spells – marks our first insight into the complicated relationship the *Souls* world shares with magic. Griggs is searching for Big Hat Logan, a legendary sorcerer he claims is his master.

Griggs will teach you about Soul Arts for the right price. Once you've learned everything he knows, you can reveal that you've already met Logan yourself, and know he's headed to the Duke's Archives to study sorcery at the home of master magician Seath the Scaleless. You send Griggs on his way, but later you can find him absentmindedly roaming the halls of Sen's Fortress, hollowed and hostile. Poor blighter. A rummage through his possessions suggests he was in fact a spy from the Vinheim Dragon School who was tracking, yup, Big Hat Logan.



LAURENTIUS OF THE GREAT SWAMP AND QUELANA OF IZALITH

Similar to Griggs, Laurentius is a travelling magician whose story overlaps with the creators of pyro magic – the Witch of Izalith and her seven Daughters of Chaos. One of the Daughters, Quelana, is the only trainer in *Dark Souls* that can max out the Pyromancy Flame, and can only be unlocked once you've exhausted Laurentius' teachings.

In his attempt to locate her in Blighttown, poor Laurentius turns hollow. It's possible to finish *Dark Souls* without meeting Quelana, but you should to hear the wealth of interesting tidbits about her family, such as their obsession with recreating the First Flame, reinstating the Age of Fire, and in turn reclaiming their rule over Lordran. All of which is, of course, in vain. Quelana explains how this power-hungry plight has instead warped her siblings into mindless monsters, which sort of humanises the hulking beasts you'll fight down the line – a rare thing in the *Souls* universe.

BIG HAT LOGAN'S DESCENT INTO MADNESS

You first meet esteemed sorcerer Big Hat Logan imprisoned in Sen's Fortress, and, assuming you see his quest through to completion, last encounter him wearing nothing but his signature oversized cap and a pair of pants, raving mad and trying to kill you.

An interesting fellow who becomes so obsessed with mastering the Soul Arts that he drives himself insane. His cautionary tale leads him to the Duke's Archives and shines a light on both the power and peril of harnessing magic in Lordran. The penultimate rendezvous with Logan is the most unsettling, whereby he intermittently slips in and out of coherent thought. Grim.





THE RISE AND FALL OF THE DEMON RACE

Few quirks of the Souls universe typify its cyclical format like the demon race. Deep within the first game's Lost Izalith and Demon Ruins, demonkind thrives. Capra, Taurus and Centaur demons patrol the fiery depths, and there are few boss battles as epic as Ceaseless Discharge and Bed of Chaos.

Fast forward to *Dark Souls 3*, and the lava lords are on their last legs. It's not immediately obvious, but rediscovering the sequel's iteration of Demon Ruins, tucked behind an illusory wall beneath the Catacombs of Carthus, lets you see the extent of

the dwindling race. Petrified variations of Izalith's beasts line the walls, and this world's Taurus demons bear no flames and exude crumbling dust with every move.

More interesting still, if you take the Old Demon King down to his last sliver of health, he slumps forward, near-extinguished and unable to muster the strength to lift his club. Here, he represents the last bastion of demonkind. It's a brilliant but easily missed nod to the doomed-to-repeat-itself nature of the *Souls* world, and the state of the demon race during this particular cycle.

PRAISE THE NAMELESS SON

The Nameless King is an optional boss in *Dark Souls 3* that puts one pretty huge *DS1* rumour to bed – Knight Solaire is not Gwyn's long-lost son. Gwyn's children include Gwynevere, the Queen of Sunlight who resides in Anor Londo, moon-worshiper Gwyndolin, also from Anor Londo, and his disgraced firstborn, banished without a trace.

Until the third *Dark Souls*, a common forum hypothesis suggested Knight Solaire was the Lord of Cinder's forgotten child. But *Dark Souls 3* suggests that the Nameless King is in fact Gwyn's disowned child, who, as alluded to by the first game's crumbling statues, was once protected by Dragonslayer Ornstein.



UPS AND DOWNS

Another simple but neat example of the *Souls* world's cyclical nature is Laddersmith Gilligan's reappearance in *Dark Souls 3*. There's no real story here, besides the fact that, as we learn very well in *DS2*'s central Majula hub, old Gilly loves ladders. Deep within Yhorm the Giant's Profaned Capital, though, there is a dilapidated structure strewn with ladders.

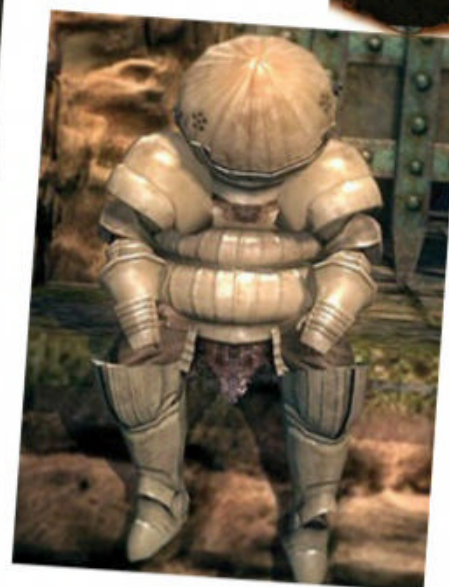
If you look closely, poor Gilligan is laid flat, seemingly dead, after a nasty fall. Another cool, if cruel, nod to the series' skewed timeline.

SIEGMAYER AND SIEGLINDE

Siegmeyer and Sieglinde of Catarina's combined sidequest is one of the best in the *Souls* series. It's heartfelt, it's intriguing, it requires skill and timing in equal measure and it takes you all over the world map, before concluding in Ash Lake.

Despite the myriad ways *Dark Souls* can be interpreted, few of its quests are genuinely poignant, and when you mix a stubborn, thrill-seeking father who's travelled to Lordran in the midst of a mid-life crisis, a daughter who'd travel to the ends of the earth to protect and/or enlighten him, and themes of death and mortality, you're onto a winner. And when *Dark Souls* wins, more often than not, you and its NPCs lose.

If you haven't seen this quest through to completion before now, you should, if for nothing else than to visit one of the game's most hauntingly beautiful locations.



BEING A DARK SOUL

Fair fights are for fools. *By Rich Stanton*

I am a dickhead. Yes! Wallow in my lake of apathy, noobs. Why am I such a bad man? It's simple – I've mastered cheap *Dark Souls* kills.

I'm not talking about nonsense. I'm not a forest ganker (though I did build an anti-gank sorceror glass cannon, but that's another story). What I am... is a bit of a clown.

One of the aspects of *Dark Souls* that, to my mind, never gets enough credit is the humour. Yes you die over and over but sometimes, isn't it just a pratfall? I'm not the only player that's seen "YOU DIED" and responded with a chuckle.

And I took that attitude into PvP. Initially it was all about winning and then... I realised you could do much more interesting things. One of the brilliances of the *Souls* series is its

embrace of asymmetrical multiplayer – the invader is uninvited, unsought and has the NPCs on-side. They're a prick, basically, and this is what I came to love.

It's not about having the best weapon. It's not about anything other than if you can unfairly screw someone over.

My favourite: I'm the guy that pushed you off the Kiln of the First Flame's beams, using low-level miracle Force, because I hid behind a pillar and watched you walk up and... yes, I boomed you off the edge. I sat in an attic for like a year doing that to people. Yes I'm a saddy but it's also just hilarious.

Still, they never saw it coming. I'd sit in my attic in the Kiln and run for that pillar once, twice, two thousand times. I would wait and you would wait and eventually you and your mates would traverse the beam and BONK! Off you go. Soz boys.

The next level of dirty tricks is a spell called Chameleon. It turns you into an object from the area you're in. As an invader, the dream opportunity for this is Sen's Fortress – because you turn into a statue, and the place is full of statues, and those innocent fools just fly by.

The thing about Sen's Fortress is that anyone going through it is already terrified. When "Invaded by XXXN00bKILLAXXX" turns up (note, this is not my ID) then folk go from scared to brown trousers pretty





LEFT: Sometimes, you have to give in order to get.

ABOVE RIGHT: Sadly, BUTTMASTER died to a rear stab.

TOP RIGHT: Few feelings top parrying new pretenders.

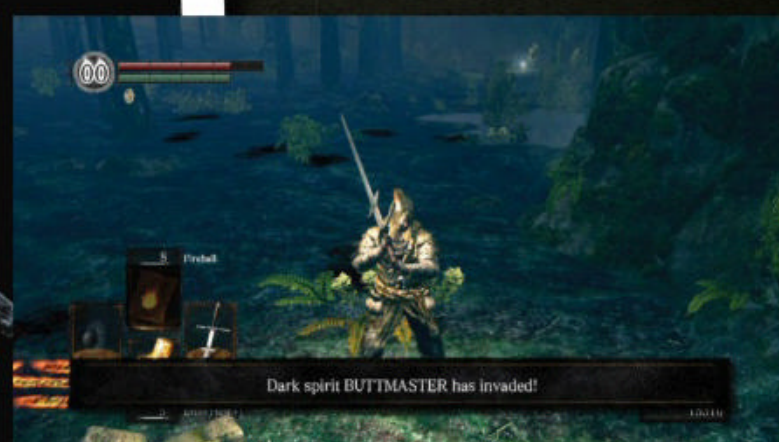
fast. So you hide. You turn into a little statue and let the fear build, watching their health bar occasionally appear through the scenery. And the real beauty of this? By the time they walk past you, they forgot you even came in.

FEEL THE FORCE

Hello my friend. Perhaps I met you fairly early, knocked you into a pit full of titanite demons and lizard wizards, then nailed you with a diving plunge. Perhaps it was a bit later – when you tried to take out those lizards, I somehow pushed you off. Perhaps it was on the top bit with

the balls, when I Forced you back into them. Perhaps that final long beam when I would suddenly appear and, cheap as chips, Force you off. I used to line them up like chocolates, and every single one went down.

Am I proud? Well, yes. But the question also illuminates an aspect of *Dark Souls*. You should never, ever play fair.



I always found it bizarre that the *Dark Souls* 'community' came up with very chivalric ideas of PvP. You could not misunderstand this game's elements more. I'm not a cheat. But I'm a player who will use any advantage available and that is what *Dark Souls* excels at. Sly tricks. Hiding yourself. Not being obvious.

Get every advantage you can and then destroy them. It's the nature of the game. I used to make videos of the players I Forced off the pit – but then there were too many. Sen's Fortress? So many victims... I almost felt bad. Almost.

The communities for these games try to set rules for how you play them. Ignore everything they say. Rejoice in the game itself.

Dark Souls is about pressing advantages. When you invade someone, use every single tool you have to win. Disguise yourself. Hide behind corners. And then leap, pure and true, and nail them.

Dark Souls PvP has always suffered from the purists. I'm not

interested in a 1vs1 for the sake of it – I want to scare folk. That is what I always loved about *Dark Souls* and why it remains such a special game. When you invade someone, you're terrifying,

What more could one ask? Don't just go for them – dive at them. That's what makes *Dark Souls* special. ■

**SO MANY
VICTIMS...
I ALMOST
FELT BAD.
ALMOST**

FASHION SOULS

Why git gud when you can look damn good? *By Sam Greer*

One thing folks can't get enough of with *Dark Souls* is lore, but the *actual* best thing is how little exposition there is. In every shift in environment, in every new enemy encounter, there is a story unfolding if you can just piece together the details.

Each detailed helmet, every scrap of leather and flowing cloak is woven into the world in such a way that they all have a lineage through its setting. Outfits like the bone carved armour of the Dark Set aren't subtle in presenting a humanity-stealing faction, and the classical Greek and Roman styling of the Faraam Set lay down a connection to a nameless god for anybody willing to join the dots.

Hand all this to the players? That selection of armour you've cobbled together means something. Whether by accident or design, when you enter another player's world in *Dark Souls* your look carries meaning.

You create a personality and character, through nothing but a choice of attire. Fashion Souls is no joke and I want to take you through a few of my creations and what they might say to onlookers...

THE IRON MAIDEN

This is my mainstay who I've brought with me through each entry in *Dark Souls*. Some staples remain: big sword, battered armour and a mean demeanour but the options in each game have shifted her look from stoic knight to fallen warrior, perfectly reflecting each game.

Her final look will be familiar to those who battled Slave Knight Gael, but has a few flourishes like the Northern Helm for a sense of rich history and Sunset Leggings to reflect many battles. The shattered sword is the cherry on top though – she's broken but cannot be stopped.





THE MYSTIC

Anyone who's played through *Dark Souls* will recall both the Channellers and their master, Seath the Scaleless. This combination ties a character explicitly to him and his experiments, but the blood stained skirt and Golden Tracer sword suggest someone firmly off the chain. Someone escaped from the Duke Archives? A servant gone wrong? Their holy shield suggests someone who has recently turned down a different path but faith hasn't made them merciful. Nobody could possibly be certain but the air of mystery is sure to intimidate any who cross their path.



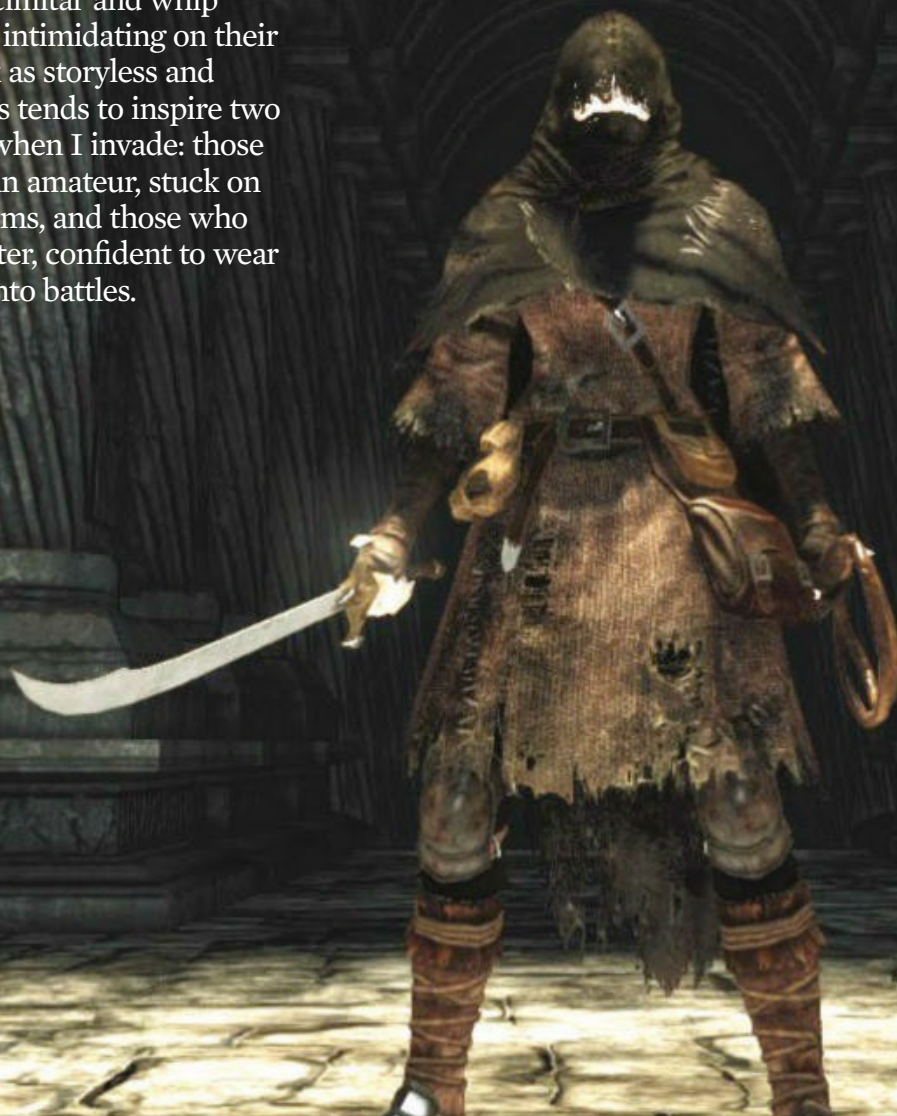
DON QUIXOTE

Who says I'm above a bit of dressing up? A roaming warrior who's lost their mind fits perfectly into the world of *Dark Souls* and Lucatiel's Mask here was itself inspired by the character of Don

Quixote. The battered armour looks borrowed but somewhat knightly, and the hat gives a pompous vibe that is a must. His weapon of choice, the lance, isn't one of *Dark Souls 3*'s most capable weapons but anyone using it would have to be both brave and stupid, a perfect fit for The Man of La Mancha.

PILGRIM

Dark Souls 2 has some of the series' most diverse options but I can't get enough of this humble look. Using nothing but the Imported Set, coupled with the Wanderer's Greaves, this is all starting equipment. The scimitar and whip aren't particularly intimidating on their own either. A look as storyless and unassuming as this tends to inspire two kinds of reaction when I invade: those who thought me an amateur, stuck on the game's first items, and those who thought me a master, confident to wear nothing but rags into battles.



ADVENTURER

This flamboyant look makes use of the Antiquated Plain set but finishes it with the Pale Shade Trousers for those gorgeous white boots. It's a world away from the battered armour and boiled leathers of most of *Dark Souls*' outfits and lets someone stand out while also suggesting a distant origin, perhaps from another time all together. The Aquamarine Dagger, that summons a glowing crystal blade, is a magical finish that is awkward and challenging to fight. It isn't the most protective so will require some confidence, but this might throw your enemies off guard.



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REVIEW

HOW WE REVIEW

We review each game on its own merits, and try to match it to a reviewer who's a passionate expert in the field. The main aim of reviews is to help you make buying decisions. To this end, we're selective about what we review, and try to focus on the notable, interesting, exciting or surprising.

DOWNLOADABLE CONTENT

DLC might be new missions for a game, or it might be a single new item. If we think you want to know about it, we'll review it.

EARLY ACCESS

Any released alpha, beta, or otherwise unfinished game that you can currently pay for. For these games, we won't assign a score, but we will tell you whether they're worth your time.

THEY'RE BACK

Whenever there's a bargain or re-release of a significant game, our expert will revisit it and tell you whether it holds up today. With jokes.

OUR SCORING SYSTEM EXPLAINED

00%-09% Broken or offensively bad; absolutely no value.

Example *Leisure Suit Larry: Magna Cum Laude*

10%-19% We might be able to find one nice thing to say about it, but still not worth anyone's time or money.

Example *Gettysburg: Armored Warfare*

20%-29% Completely falls short of its goals. Very few redeeming qualities.

Examples *Family Guy: Back to the Multiverse*

30%-39% An entirely clumsy or derivative effort. There's little reason to play this game over a similar, better one.

Examples *Trials of the Blood Dragon*

40%-49% Flawed and disappointing.

Examples *Aliens: Colonial Marines*

50%-59% Mediocre. Other games probably do it better, or its unique qualities aren't executed well.

Examples *Primordia, Homefront: The Revolution*

60%-69% There's something to like here, but it can only be recommended with major caveats.

Examples *No Man's Sky, Ghost Recon: Wildlands*

70%-79% A good game that's worth playing. We like it.

Examples *Prey, NieR: Automata*

80%-89% A great game with exceptional moments or features, and touches of brilliance. We love it.

Examples *Overwatch, Night in the Woods*

90%-94% A compelling recommendation for most PC gamers. Important to PC gaming, and likely ahead of its time.

Examples *Bayonetta, Dishonored 2*

95%-96% Far and away one of the best games we've ever played. We recommend it to the entire world.

Examples *Half-Life 2, Kerbal Space Program*

97%-100% Advances the human species. Boosts the immune systems of nearby children and small animals.



The Editor's Choice award is granted in addition to the score, at the discretion of the PC Gamer staff. It represents exceptional quality or innovation.

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www.bit.ly/pcgreviews



Blade stunner

I tend to treat From Software's games as ongoing projects; things to be picked at over the course of a couple of years. If during that time the community fills its wikis with guides, hints and secrets, all the better for me. Kudos, then, to Tom, who had to finish *Sekiro* before release in order to write our in-depth review. May he recover from the memories of that ape.

Sekiro's release has prompted a series of hot takes, most recently about cheating. Rather than add to the discourse, I'll just say this: you do you. If you want to test yourself against *Sekiro's* challenge, great. If you want to cheat to make a boss fight easier, that's fine too.

From Software made it, but you get to play it however you want. Never let the internet's gatekeepers tell you otherwise.

Phil Savage

PHIL SAVAGE
EDITOR

phil.savage@futurenet.com

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MARTIAL ART

Become a master shinobi in the sublime
SEKIRO: SHADOWS DIE TWICE. By Tom Senior

The enemy samurai fires a bolt from his enormous bow. I tap the parry button and slice the arrow out of the air. I know the shot is just cover for a sliding charging slash with his blade. It's two quick strikes, but I'm expecting it. I tap the block button twice to deflect both with a loud ringing sound and a flash of sparks. A glowing red symbol tells me that an unblockable attack is coming, an attack that has killed me three or four times before.

The samurai lunges forwards with a thrusting stab. I press B at the last second and – this never gets old – my shinobi effortlessly steps on the blade and brings it harmlessly to the ground. My counter is rewarded by a loud boom noise. If this was an ordinary enemy I would press the right bumper and thrust my katana into their exposed neck for a brutal kill, foot still pressed down on their useless weapon. The boss just staggers back, resets his stance, and the battle resumes once more.

Sekiro: Shadows Die Twice is the latest from *Dark Souls* developer From Software. It's set in a fantasy vision of Sengoku Japan, in the middle of a conflict between the Ashina and Hirata clans. You play a rogue shinobi called Sekiro – the

one-armed wolf – charged with protecting a young lord who has the coveted power to defy death.

It's more of an action game than an RPG. You pick up new prosthetic arms and learn new combat

techniques, and even put skill points into a few upgrade trees. Don't expect to be fiddling with armour stats – this is a game about brief, deadly battles in an age of kunai and katanas.

Sekiro's combat system is beautiful. Instead of chipping down health bars until the enemy keels over, you overwhelm their posture bar with strikes and perfect parries until an opening appears, and then finish with a deathblow. Enemy health bars are there to affect the amount of damage an enemy's posture takes.

I love the catharsis of beating a great boss in a From Software game

NEED TO KNOW

WHAT IS IT?

A challenging third-person action game about a shinobi on a quest for revenge

EXPECT TO PAY

£50

DEVELOPER

From Software

PUBLISHER

Activision

REVIEWED ON

GTX 970, i7-8700, 16GB RAM, 512GB SSD

MULTIPLAYER

None

LINK

www.sekiro.thegame.com



As you get slashes through an enemy's guard and damage them directly, they will take more posture damage from future attacks and recover more slowly.

You can attack enemies with combos, special sword attacks, prosthetic gadgets and shinobi arts, but the aim is always to max out that posture gauge and get that final blow.

I love the catharsis of beating a great boss in a From Software game. In *Sekiro* the deathblow system focuses all that emotion into one split second. After a tough encounter there's a rush of elation and relief when you see the red deathblow reticle and hit the killing attack.

MISS, PARRY, KILL

Boss exchanges can be gruelling. If you dislike using parry timings in combat – pressing the block button just as an enemy attack lands – then *Sekiro* might not be for you. Some bosses require you to consistently parry multiple combos. One fight in a tight space with a creature called Long-Arm Centipede Giraffe is basically a rhythm action sequence. You can't avoid their blitz of attacks, you just have to deflect them all in a shower of sparks and swishing swishing noises. Precise deflections deal posture damage back to the enemy, and some enemies are designed to be defeated using deflections alone. It's a tough but incredibly rewarding system to master. It feels amazing to effortlessly deflect and counter enemies that were once a terrible challenge.

Thankfully parry timings are generous and much more responsive than the vague shield-wave you get in *Dark Souls*. You can also hold block and then release-and-tap to get a parry, which keeps you relatively safe as you're learning enemy attack patterns. Enemies throw you out of blocking with special thrust, slash, and grab attacks, which have their own counters. You can step on a thrust, and you can jump over the slash, kicking off the enemy's head

ROUTE FINDER *Sekiro's world is a joy to explore*



1 You resurrect at idols scattered generously throughout the feudal world.

2 You can grapple between trees to access secret areas.

3 Stealth routes let you insta-kill bad guys patrolling these buildings.

4 In about ten hours you'll manage to fight your way into this castle.

Live by the sword, die
by the sword. A lot.



That's probably more blood
than a body can actually hold.



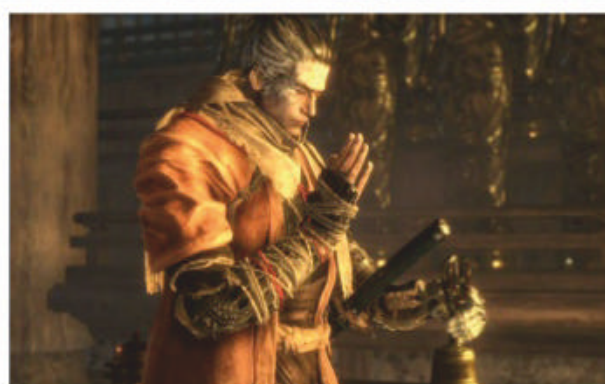
Samurai fans
look away now.



You can't parry mallets
very well. Dodge instead.



It's far quicker and easier
to stealth kill big lads.



You can get instant stealth kills from above as well.



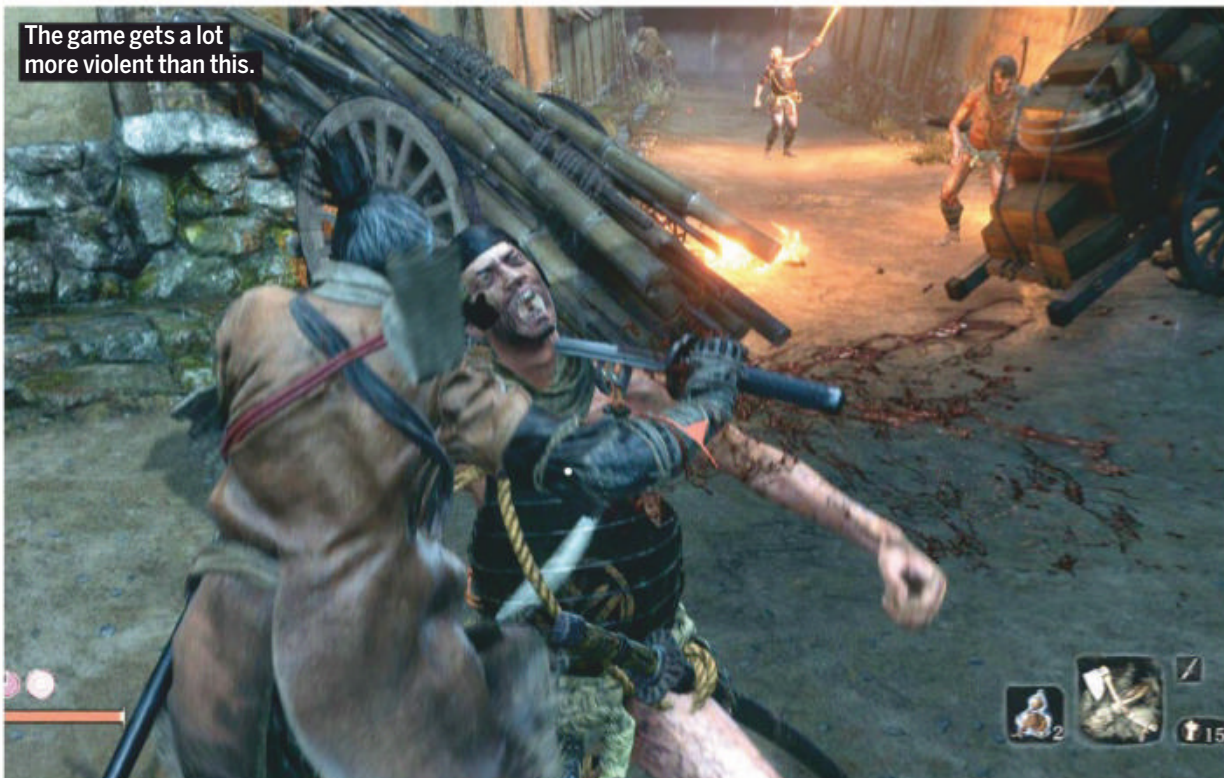
Sekiro proves that, yes, katanas are the coolest.



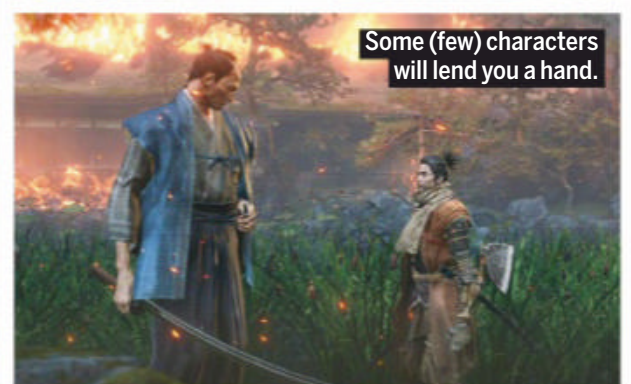
You don't know true pain until you've faced Guardian Ape.



The game gets a lot more violent than this.



Some (few) characters will lend you a hand.



» with a tap of the A button on a controller for a good dose of posture damage. You can use your dodge to avoid many grab attacks, but as you fight deeper into the game, expect enemies to start wrong-footing you with unusual attack patterns.

You can counter with your increasingly powerful prosthetic arm. As you find upgrades you can return to your hub, the Dilapidated Temple, to have your gruff but caring sculptor friend install and upgrade them. Upgrades include an axe that smashes enemy shields, an unfolding metal umbrella that deflects gunfire, a device that throws shuriken (brilliant for knocking jumping enemies down mid-flight), and more that I won't spoil. You can switch between three at a time and swap those three around in the pause menu whenever you like. They are often designed to counter specific enemy behaviours, and an opponent that initially seems impossible can often be defeated easily with a specific prosthetic attachment – shield enemies are comically rubbish once you find the axe attachment.

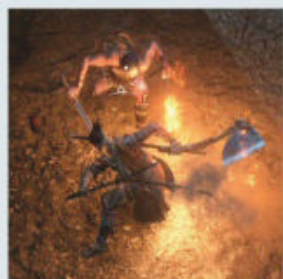
This isn't a *Dark Souls* game, but *Sekiro* has plenty in common with the dark fantasy RPG series. *Sekiro* is made up of large but separate zones rather than a huge connected world like Lordran. *Dark Souls* fans will still enjoy the knotted structure of these areas, though, and there are many secrets hidden just off the critical path, often reached with the excellent grappling hook, which lets you vault between tree branches and rooftops using the left trigger. You will find yourself returning to old areas frequently to catch up with merchants and NPCs, who have their own mysterious needs and backstories. As ever with a From Software game, I feel like I'm skirting on the surface during the first playthrough. I expect it will take months of fans making connections for *Sekiro*'s deeper stories to emerge.

WOLF'S PACK

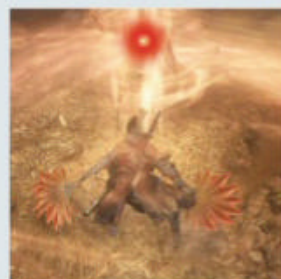
Sekiro's main plot is told through Sekiro's conversations with the little lord and other NPC hangers-on. Sekiro himself is also voiced, and plot development happens in conversations that occasionally offer multiple choice options.

You can counter with your powerful prosthetic arm

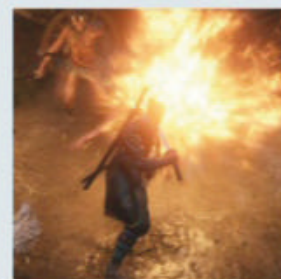
ARM YOURSELF *Get the most out of Sekiro's prosthetic weapons*



AXE
The axe smashes shields and can cause fire damage when upgraded.



FAN
The fan turns enemies around in combat so you can get backstabs.



FLAMETHROWER
Beasts hate the flamethrower attachment.



POISON
A smaller second blade poisons enemies with fast combos.

For the first ten hours or so I found the world itself to be quite bland – a mix of samey brown-hued townships with a slim selection of enemies. The variety expands enormously as the game progresses and beautiful new areas open up.

Strangely, though the combat system is very challenging, *Sekiro* is less punishing than *Dark Souls*. The environments are bound together by Idols, which are the game's equivalent of *Dark Souls* bonfires. When you die you respawn at the last Idol you touched, but you only lose half of your money and some skill experience. Thirty per cent of the time you will get 'Unseen Aid',

which means you lose nothing.

Dying repeatedly reduces that percentage chance of getting Unseen Aid, but there's no way to get completely stuck in *Sekiro*. You can bank your money by

purchasing bags of coin at vendors, and if you really want to buy something you can do a lap of an earlier area after popping a gold-boosting balloon. New skills are nice, but they're not crucial to progression.

Importantly, stat boosts are tied to bosses. You can process memories of great boss fights to increase attack power and turn in prayer beads to increase health and posture. You get prayer beads from secret chests and one-off kills of tough ordinary enemies. That means you can't grind for stat boosts. Instead, the game is balanced around a predictable player power level. To me this is a considerable improvement on the *Dark Souls* formula. It removes all anxiety about being under-levelled or under

equipped – you just take on the challenge that's presented and improve your skill to progress.

It helps that you can come back from the dead. Every time you rest at an Idol you restore up to one resurrection, but killing enemies charges up a second. You can't use multiple resurrections in quick succession, but they are a vital crutch and an interesting tactical consideration, especially during boss fights. *Sekiro* always presents you with multiple exploration avenues at the same time, so if you get stuck on one area, you can try to progress in the other, or backtrack to take on a miniboss that was too tough earlier. Stealth also takes the edge off. In some areas with a lot of ordinary enemies you can discover stealthy routes past them, which makes repetition far less dull. It's also fun to use stealth in combination with combat. I like to try to eliminate at least one member of a group with an instant stealth kill before blitzing the rest with my sword.

Sekiro took me 73 hours to complete, but there are high level challenges hidden throughout that could add another ten before I plunge into new game plus. *Sekiro*'s combat system serves up exciting new challenges to the end and the shinobi fantasy is powerfully realised in every savage deathblow and perfectly timed parry. If you're up for the challenge, *Sekiro* will reward your patience with some of the most spectacular, nerve-wracking duelling on PC. ■



PC GAMER VERDICT

An uncompromising action game with sensational sword combat. From Software has done it again.

92

DIG DEEP

Unravelling the past in ace archaeology adventure, **HEAVEN'S VAULT**. By Philippa Warr

Heaven's Vault is exquisite. I've finished my first playthrough of the archaeological sci-fi adventure, so the main narrative mysteries like "What happened to roboticist Janniqi Renba?" and "What exactly is Heaven's Vault?" are known. The reason I immediately headed into New Game Plus is that the real puzzle at the heart of Heaven's Vault is translating the world's Ancient hieroglyphics. That's still unfolding and it's absolutely stunning.

As archaeologist Aliya Elasra I've sailed the cosmic rivers of the Nebula in my wooden spaceboat. I've docked at distant moons, pottered around farms and markets, and chatted with a varied cast of characters, including many little exchanges with my companion robot, Six. The story's mysteries provide a structure to guide your explorations but for me they were always secondary to the joy of collecting new text fragments and teasing out new meanings.

Finding text fragments happens in a number of ways. There are artefacts with carved inscriptions – weapons, oil burners, lintels, sculptures... There are fragments of books. There is graffiti. There are murals. Some are obvious thanks to the UI immediately marking them out on the screen as areas to interact with. Others only appear if you explore the nooks and crannies of an area.

When you find one you'll see it laid out on the screen as a string of symbols. The raw form is scripta continua – there are no spaces to separate words – so part of the

puzzle is actually affixing meaning to particular groups of symbols and part of it is figuring out how to apply those symbols. To give an example, say you had a string of text with no spaces which included the letters "T O G E T H E R".

Part of decoding is figuring out if those are to be read as "together" or "to get her".

At first context clues will be your main guide. If Aliya describes an artefact as also featuring the sign of

the Empire, the word 'emperor' or 'empress' might appear. If the object has an obvious function, like a place of worship or a weapon, that might help too. You might also just look at the options the game provides and try to make the most natural sounding sentence out of those.

If your translation makes sense in multiple contexts Aliya will change it from a speculative meaning to a definite translation in her dictionary. These come in really handy because when you're dealing with unfamiliar words the game will show you words with similar symbols from your dictionary which might be related.

Finding text fragments happens in a number of ways

NEED TO KNOW

WHAT IS IT?
An archaeological code-breaking mystery

EXPECT TO PAY
£20

DEVELOPER
inkle Ltd.

PUBLISHER
In-house

REVIEWED ON
Core i5-8400k, 8GB RAM, GTX 1060, Windows 10

MULTIPLAYER
None

LINK
inklestudios.com/heavensvault/

For the more hardcore grammar/linguistics/logic nerds you can grab your notebook and deduce more nuanced systems. At one point I took a break from visiting locations to pick through my dictionary, and established that there are markers denoting the past-tense, signalling adjectives and verbs, and indicating that two concepts are tied to one another. My most smug moment was being able to translate fragments which Heaven's Vault wouldn't let Aliya decipher in-game yet.

HIEROGLYPHICS

Heaven's Vault is not perfect. Sometimes info added to the in-game historical timeline is a little out of sync with what the character has learned from the conversation. The river is clunky to navigate and sometimes tells you you've gone the wrong way despite following Six's directions. Aliya's knowledge of Ancient hieroglyphics feels too small at the start. Walking around the moon of Elboreth is annoying. Oh, and sometimes trawling for artefacts feels very pixel-hunty. For me none of these are more than minor irritants, but others found them more abrasive.

There's also the animation system. I really like it but I know that's not universal. If you stand still and then start walking again you'll see a ghostly image of Aliya in the spot where you paused for a second or two before it fades. To me that's a nod to the game's archaeology theme. Aliya's presence leaves imprints in the world, perhaps footprint or scent. They fade fast, but they're on the same spectrum as the artefacts.

Heaven's Vault does a beautiful job of letting you unlock a language, and thus a dialogue of sorts via a wonderfully engaging protagonist. ■

PC GAMER VERDICT

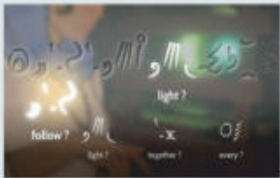
Heaven's Vault communicates the beauty of assigning meaning to symbols, and the people who wrote them.

88

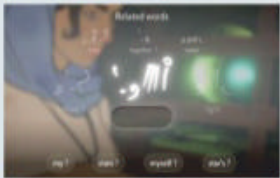
BECOME A TRANSLATOR What you do with a text fragment



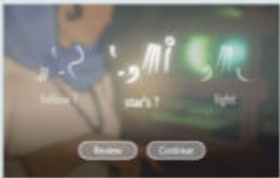
1 The text fragment appears in an unbroken string with translation options below.



2 Drag and drop translations to figure out where words start and finish.



3 For new terms, related words appear above and suggested translations are below.



4 You can revisit uncertain translations later armed with new knowledge.

Speed up by moving to the middle of the river.



Question   Remark

SOME KIND OF ROBE?

Even fabric can contain snippets of text.



OR MAYBE I'M HOLDING IT UPSIDE DOWN, I DON'T KNOW.

Some objects are trickier than others.



DO NOT TOUCH ANYTHING, MISTRESS!

Six is not a fan of my hometown.



Something is AFOOT!



YOU WOULD WAND ME OVER TO THE FIRST DREAM? AFTER PROBABLY TO COME ALONG?



DOUBLE DRAGON

YAKUZA KIWAMI 2 is a return to form for the singular crime series. *By Phil Savage*

Welcome back to Kamurocho. Things are different here now. The Tojo Clan is in disarray after the events of *Yakuza Kiwami*, Majima has started a construction company, and there's *Virtua Fighter 2* in the arcades. But more dramatic than any of these small developments is *Yakuza Kiwami 2*'s big change – the series' new Dragon engine, and the many improvements and tweaks that it brings.

Yakuza is an economical series that rarely reinvents the wheel. It often reuses assets and animations, because the focus is always on the same handful of districts, and the small ways they change over the course of decades. *Kiwami 2* is still a *Yakuza* game, which means it's still a crime drama interspersed by fights, exploration, minigames and substories full of ridiculous slice-of-life character moments that help humanise protagonist Kiryu – making him more than the hardboiled stereotype he could so easily have been. It's also a remake of 2006's *Yakuza 2* that, despite looking significantly better now, features mostly shot-for-shot recreations of its cutscenes.

Still, the changes Ryu Ga Gotoku Studio bring to the Dragon engine offer a significant shift in style and systems. You can now seamlessly enter buildings, for instance, and brawls that start on the street can even spill into shops. It makes the

city feel more cohesive and connected, and the game as a whole feels more modern – up to a point. I slightly prefer *Yakuza 0*'s combat, which felt crisper and more arcadey in a way that made fights more enjoyable. But overall, the enhancements are a success.

Brawls that start on the street can even spill into shops

It looks nicer, too. *Kiwami 2* takes place in both Kamurocho and Sotenbori, the two locations from *Yakuza 0*, and in both the streets feel wider and more detailed. Just standing in them, Kiryu feels smaller, which helps better convey the scale of the city. Once again, Sotenbori – based on Osaka's Dotonbori – is the standout. Its main street is a beautiful explosion of billboards, flags, lanterns and mechanised signs. *Kiwami 2* does a particularly good job of highlighting the differences between its two locations. Everything about them has a different flavour, from the type of substories that Kiryu encounters to the music that plays during a fight.

NEED TO KNOW

WHAT IS IT?
A remake of *Yakuza 2*, a game about punching a lot of people

EXPECT TO PAY
£25

DEVELOPER
Sega

PUBLISHER
In-house

REVIEWED ON
GeForce GTX 1070, 16GB RAM, i5-6600k

MULTIPLAYER
Two players, local, in *Virtua Fighter 2*.

LINK
yakuza.sega.com



EAST VS WEST

Those differences help contextualise the story. When hitmen from Osaka's Omi Alliance assassinate the Tojo Clan's fifth chairman, Kiryu is dragged back into Japan's underworld on a mission to stop the two cities' gangs from descending into open war. In his way is Ryuji Goda, the Dragon of Kansai. In Ryuji's mind the world isn't wide enough for both Kiryu, the Dragon of Dojima, and him. From their first meeting, it's clear the two are on a collision course, and that inevitability adds great tension to the events.

Kiwami 2 is also about the relationship between Kiryu and detective Kaoru Sayama, who places him under protective custody in an effort to prevent his showdown with Ryuji. Despite the differences between them the two grow closer over the course of the game. Outside of the main story, Kiryu has an almost childlike naivety about sex and romance. But his relationship with Sayama adds depth to the character and is heartwarming to see.

While the story isn't quite as tight as *Yakuza 0* – suffering from the occasional tangent, lull and contrived twist – it's still one of the strongest of the series. And elsewhere, *Kiwami 2* is packed full of interesting diversions. There's a return of *Yakuza 0*'s cabaret club, which picks up some of the same story threads. There's a strange RTS minigame featuring Majima's construction company that is admittedly more functional than enjoyable. There's even a bit involving adult men in diapers.

Where *Yakuza Kiwami* felt like an expansion to *Yakuza 0*, *Kiwami 2* is large, varied and full of interesting asides. While I still slightly prefer *Yakuza 0*, this is worth your time. ■

AND THE REST *More Yakuza games that should come to PC*



YAKUZA 3
First released: **2009**
Kiryu moves to Okinawa to get away from his past. Guess if he succeeds.



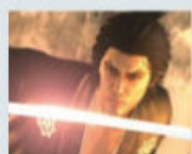
YAKUZA 4
First released: **2010**
Features four protagonists, including the money lending Akiyama.



YAKUZA: DEAD SOULS
First released: **2011**
A non-canon survival horror spin-off. It still features karaoke.



YAKUZA 5
First released: **2012**
Five cities! Taxi driving! Dance battles! You can punch a bear! I love it.



YAKUZA ISHIN
First released: **2014**
A spin-off set in 1800s. Has never been localised for a Western release.

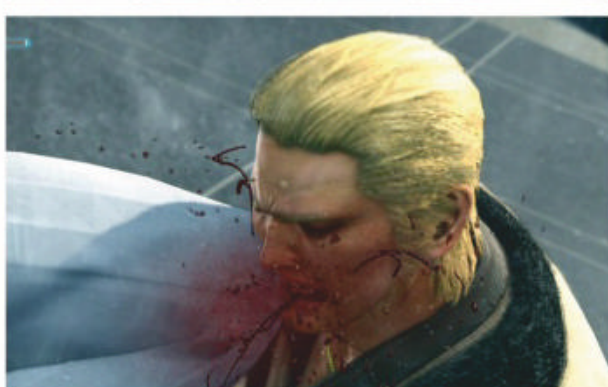
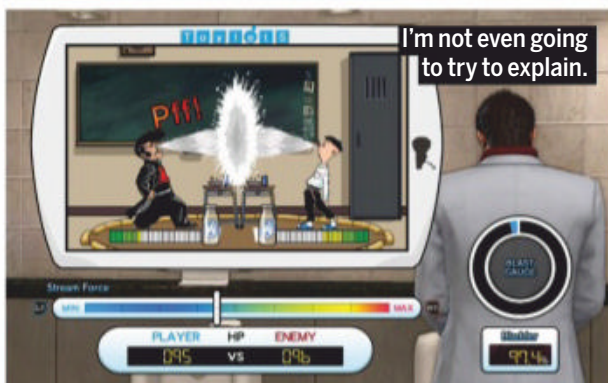
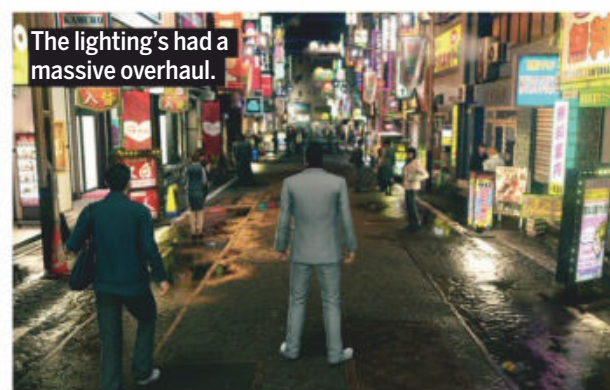


YAKUZA 6
First released: **2016**
Kiryu's final game. On PC, it seems we're going in order of story.

PC GAMER VERDICT

A triumphant remake of *Yakuza 2*, full of fun diversions and featuring one of the series' best stories.

88



VIVA LA EVOLUTION

A strong and stable return, but can
TROPICO 6 earn your vote? *By Phil Savage*

Tropico 6 is a great game for people watching. It's a satirical city builder in which every one of the citizens of your banana republic is simulated. You place a mine. You watch as a construction crew makes their way over to the building site. You watch as the newly constructed mine's employees start digging for gold or coal or uranium or whatever. And you watch as teamsters come to take the raw materials to a factory for processing.

When it's all going well, there's a calming rhythm to the bustle of your island. When it's not, you find yourself scouring around the map, trying to diagnose problems. Why hasn't the mine been built? Why haven't the goods been transported? Why is the processing plant out of raw materials? Why isn't the shipment at the docks?

The focused simulation means that small inefficiencies can balloon into big problems. That's why – while there is a sandbox mode with plenty of different islands and options – often the *Tropico* series is at its best during the campaign missions, where requirements force you to adapt.

In sandbox, you can go slow, sensibly growing your island, diligently pursuing new financial ventures, effectively placating political factions and superpowers. You have the space and freedom to effectively manage your growth as

you progress through the different eras. Each focuses on a different aspect of the game, be it the spread of propaganda, the challenges of mass tourism, the balancing act of international relations, or the benefits of light piracy.

The latter is one of the most entertaining. Starting on an island with virtually no natural resources, you're required to pillage raw materials to then manufacture into more profitable goods.

The raid system is a powerful tool, essentially gifting a regular trickle of goods, immigrants and, in later eras, beneficial propaganda and even falsified tourist reviews. Having to create supply chains that aren't supported by local crops is a meaningful twist.

If there's a downside to raids, it's that there's no major downside. Foreign powers have traditionally taken a dim view to piracy, but in this, a game that specifically pokes

**The only thing
that can
placate them?
Building a
golf course**

NEED TO KNOW

WHAT IS IT?
The latest in the city building series, now with a new developer at the helm

EXPECT TO PAY
£40

DEVELOPER
Limbic Entertainment

PUBLISHER
Kalypso Media

REVIEWED ON
GeForce GTX 1070,
16GB RAM, i5-6600k

MULTIPLAYER
Up to four players

LINK
www.worldoftropico.com

fun at international relations, it just doesn't come up. You do at least get a negative reputation modifier for stealing famed national monuments like Saint Basil's Cathedral or The White House, but it's easy to mitigate and goes unremarked upon when said nation next gets in touch to demand you complete some task.

ECONOMY, STUPID

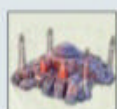
Where the missions excel, it's in forcing you to take actions that can upset the delicate balance of economic growth. If political strife always feels manageable, financial ruin is a more immediate danger, especially when progressing through to a new era.

Tonally *Tropico* is almost too broad and bawdy to be considered satire, but the over-the-top absurdity does lead to some fun mission requests that feed comedy into mechanics. In one, for instance, the communists instruct me to dismantle religion, banks and mansions. This leads to outrage from the capitalists. The only thing that can placate them? Building a golf course.

Tropico 6 was developed by new series stewards Limbic Entertainment, but you'd be hard pressed to know by just playing the game. It takes *Tropico 5*'s era system, reintroduces *Tropico 4*'s political speeches and work modes, and adds in a few new features designed to complicate supply chains and diversify systems.

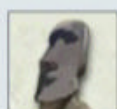
Ultimately, this is still a series about people watching. The builder. The miner. The teamster. The factory worker. I've been watching these people perform the same tasks since I first encountered the series with *Tropico 3*. I'll probably watch them for many, many hours to come. ■

WONDER HAUL Which world wonders to steal, and how



HAGIA SOPHIA

When: Colonial Era
Requires: Pirate Cove
Origin: Turkey
Ensures that citizens won't die of poor healthcare, you monster.



MOAI HEADS

When: World Wars
Requires: Commando Garrison
Origin: Easter Island
Increases speed of boats, freighters and ships.



STATUE OF LIBERTY

When: Cold War
Requires: Spy Academy
Origin: USA
All immigrants are 100 percent happy with you. (Does not work in real life.)



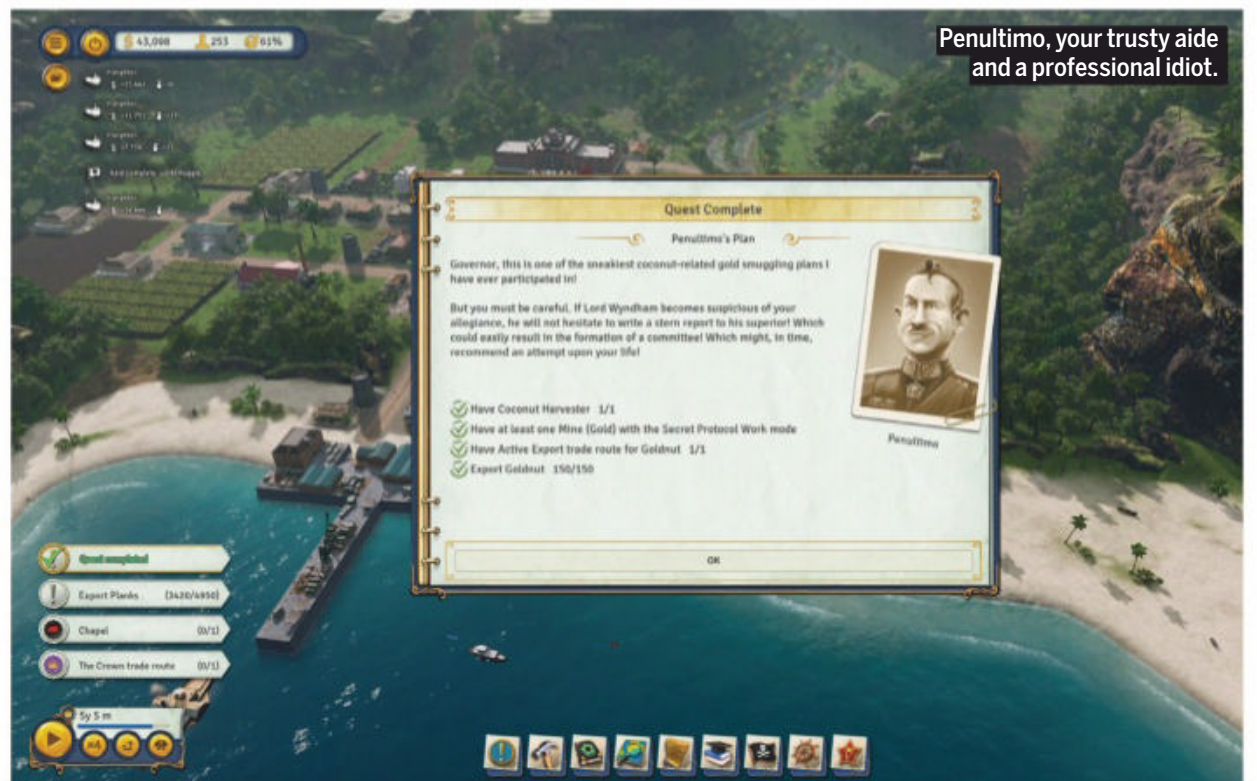
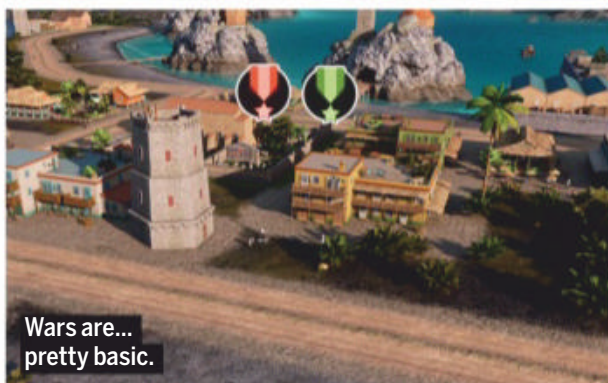
THE GREAT PYRAMID OF GIZA

When: Modern Times
Requires: Cyber Operations Center
Origin: Egypt
Construction rate up by 50 per cent.

PC GAMER VERDICT

An unambitious sequel that collects up the best features of previous games and adds in some interesting new twists.

79



CONQUERED

IMPERATOR: ROME might be the grandest strategy of them all. *By Fraser Brown*

Running a nation is dirty work. It necessitates bribery, blackmail and occasionally spreading fear. You're a parent, essentially. *Imperator: Rome* is Paradox's latest grand strategy game, this time serving as a window into antiquity. You can pick a nation from the classical era and then paint the world one colour: yours. Supporting all that lovely global conquest, however, is one of the best internal politics systems the studio has designed, and one driven by characters. Assholes, every one of them.

Imperator is a follow-up to *Europa Universalis: Rome*, Paradox's attempt to shake up the series' broad grand strategy formula with some features from the original *Crusader Kings* and *Victoria*. The concept is largely the same, this time uniting systems from the most recent games, yet *Imperator* is more evolution than spin-off and more cohesive than a 'greatest hits' compilation.

While you play a nation rather than an individual, your empire will still be full of them – ambitious, bickering aristocrats, all grasping at power, wealth and, judging by how often they die in flagrante, sex. They belong to families of varying importance and can act as generals, politicians and researchers, and while you have some control over them, they can push back in moments of unexpected autonomy.

They are essential to running the nation, but they're also constantly clogging up the works with their plots and personal armies. They have aged me, but I still love all of my terrible Roman children.

Republics like Rome are mutable but also full of rules. They have elected leaders and several different factions vying for power. Each faction has its own objectives, but then all

Republics like Rome are mutable but also full of rules

the senators and faction supporters are people with their own ambitions and grudges. Every diplomatic decision has to go through the Senate first, potentially stopping you from starting a war if the

votes don't swing your way. You can also act the tyrant, and maybe push it through, though that won't go ignored. It's one of several ways the game tries to limit the power you can exert over your empire, but rather than stopping you from throwing your weight around, it makes the journey to reach the objective much more memorable.

POPULARITY CONTEST

Trying to juggle these ladder-climbers can be a monumental, messy task, but it's the source of brilliant emergent stories and engaging leadership conundrums. When the Senate shot down my

NEED TO KNOW

WHAT IS IT?
A classical era grand strategy game

EXPECT TO PAY
£35

DEVELOPER
Paradox Development Studio

PUBLISHER
Paradox Interactive

REVIEWED ON
GTX 1080Ti, Intel i7-8086K, 16GB RAM

MULTIPLAYER
Yes

LINK
www.gameimperator.com



proposed war, I found myself transformed into a detective hot on the trail of a corrupt politician, poring over charts and character sheets to find ways to appeal to the nays.

I discovered that the head of the Populists was feuding with the Consul, Rome's leader, so I ended up playing matchmaker, as well as buying him a tiger, of course, all so I could get his support.

You're trying to build this efficient machine, but the distractions and fires never stop, and concessions are inevitable. You might not want to make a racist, lecherous 70-year-old a governor, but maybe you owe him favours, or he's raised an army and is willing to tear the country apart to get power. Inaction, assassination or capitulation all have consequences. *Imperator* thrives on this and putting out fires and wrangling nobles is the best part of the job.

This sort of autonomy conjures up lots of surprising moments. During a war with Carthage, when I was focused on North Africa, I somehow completely missed a naval invasion. Sick and tired of my ineptitude, one of the nobles raised an army of his own and met the Carthaginians just outside Rome, saving the day and stealing my thunder. Another asshole.

Monarchies don't have troublesome politicians, but running one comes with other wrinkles. They're more vulnerable, with most of the power being held by the royal family. If a republic loses a senator, it's a loss it can take in its stride, but a Macedonian prince is more costly. I found myself becoming a bit more invested in them, and while *Imperator* is not an RPG like *Crusader Kings*, there are moments with monarchies where the distinction might as well be meaningless. You can get hitched, become embroiled in plots and fight off usurpers, even though you're technically playing a whole kingdom.

Tribal nations can be tricky to manage. Their leaders have to rely on influential tribal chiefs that keep their

THE OTHER ONES *Interesting nations that aren't Rome*



CARTHAGE
Rome's arch-rival at the start, and a big shot in the Mediterranean. You've got a foot in Europe and Africa, and you get war elephants.



MACEDON
Wrangling Greece and then reuniting Alexander's empire sounds like a tall order, especially sandwiched between Rome and Phrygia.

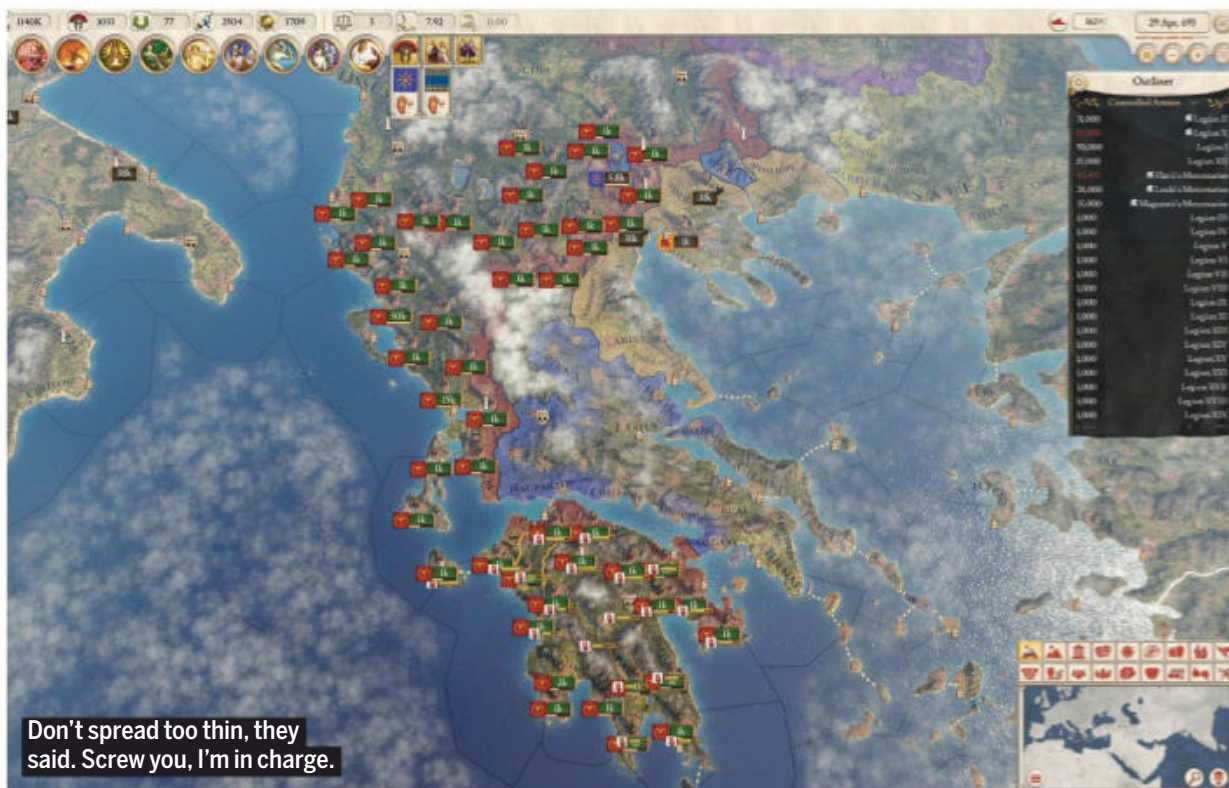


EGYPT
Egypt's big and mostly desert. It's a strange one, with limited expansion options and lots of hostile terrain, but bolstered by the stalwart Nile.



MAURYA
Unite the Indian subcontinent far from the squabbles of the Mediterranean, and spread some Buddhism while you're at it.





Don't spread too thin, they said. Screw you, I'm in charge.



Quintus was unimpressed by Decius and his 'sick rap'.



Just nice, peaceful people on a sailing trip.



100 hours of AC Odyssey and I'm in the bloody Aegean again.

own armies, and in most cases they start out small and poor, though often they're surrounded by lots of opportunities for expansion. They're perhaps the least developed of the bunch, yet there's still a lot going on, from managing migrations to uniting everyone against the superpowers. Rome and its rivals are the stars, but go off the beaten track and you'll find plenty of diversions.

DEATH AND TAXES

No matter who you play, there are certain constants: you'll need to pass laws, appeal to the gods, develop your nation's infrastructure in countless different ways and crush rebellions. Praying to Ceres (by spending religious power, just as the ancients did...) will net a bonus to population growth, while building more marketplaces will generate more taxes. Then there are the faceless masses to manage – your citizens that generate research points, your freemen that give you more manpower – and they all come with their own religions, cultures and level of happiness.

Imperator is overflowing with information on the most granular stuff. Exploring it is confusing at first, but then you start to see how all the stats and crises fit together, leading you to a solution over the course of multiple menus. I love it, but it can also be frustrating. With a tutorial that glosses over most of the important features and no help system, you've got to figure out essentially a foreign language – especially if this is your first Paradox game – all on your own. There's no dearth of detail or tooltips, but sometimes it's so condensed that the explanations can get lost in translation.

It's a lot, but everything you build and tweak is connected to one of the game's pillars and eventually starts to make sense. You need a bigger army? Build more training camps and get more freemen. Broke? Hike up taxes and build more marketplaces. You can make lots of changes very quickly. Alternatively, you can go through each province individually, fine-tuning them, moving people between cities, endlessly tweaking until it's 3am and when you close your eyes all you can see are demographics. And then you make a

MY FAVOURITE ASSHOLES *Meet the Roman Republic's dream team*



GNAEUS FLAVIUS
A chaste scholar who only wanted to be content in life, apparently, but he still messed up my plans for war and started slagging off my leader.



LUCIUS FABRICUS
I sent this guy to conquer Carthage, which he did, but when I politely asked him to stop looting and pillaging, he refused and started a civil war.



MARCUS MARCNITHUR
While waiting for soldiers to board his fleet, Admiral Marcnithur "died in flagrante delicto" and was replaced by a teenager.



LUCER MARCNITHUR
I'm not trying to pick on this one family here, but just look at this dude. I don't know what he did, but it's probably awful.

mistake and you've got a revolt on your hands. It's great.

Imperator's wars are some of Paradox's best. Once you've fabricated claims on provinces and found an excuse for war, you can start marching your troops across the border. That's more complicated than it sounds, however, because *Imperator's* map is full of obstacles. Weather, rough terrain, fortresses – they'll inevitably cost you battles. There are bottlenecks and dead ends and whole regions cut in half by massive mountain ranges, making planning your army's journey all the more essential, as well as building roads and defences around the geography.

Imperator's wars are some of Paradox's best

TEAM BUILDING

You can recruit 12 different types of unit, but they're only available if that city has access to a specific resource. You need

horses for cavalry, iron for heavy infantry and obviously elephants for war elephants. To make your perfect army, you'll need to expand and trade. Composition matters, too, as it makes your battle tactics more effective. These can be selected before battle, each with their own benefits and counters, but picking the right tactic won't mean much if you don't have the appropriate units to back it up.

Coupled with returning complications like supply limits and army morale, the additional attention given to warfare means that *Imperator* ventures into wargame territory quite a lot, and largely with success. It's more tactically rich than most of its predecessors and less abstract, but it manages to avoid

crossing the line from complex to needlessly complicated. The AI is less aggressive and expansionist than I'd expect, but this gives you more space to deal with all the internal conflicts. It ultimately balances out.

Imperator is a meaty game, but it still feels like there are some gaps. Navies are a bit ignored, for instance, lacking the tactical options of ground units and limited to a single type of trireme. There's just not much for them to do beyond ferrying troops and occasionally chasing pirates. *Imperator* has a lot of water, so it would be nice if interesting things happened there. Thankfully, there's apparently an update on the cards that aims to tackle boats.

While there are lots of playable nations, only a handful seem to have been given the bespoke treatment. While each of them will keep you busy for an extremely long time, there are definitely places where I could see an expansion fleshing areas out, particularly the migratory and settled tribes. It's still audaciously large, however, and ridiculously time consuming.

But what's the point in time if you can't spend it turning a once mighty empire into a subservient client state or dabbling in a spot of court intrigue? *Imperator* is endlessly fascinating and I expect to be digging through it for ages. Give me four more pages and I'd still have more to write. In lieu of extra pages: it's a corker and you should probably check it out. ■

PC GAMER VERDICT

Imperator: Rome is huge, inventive and it is the reason that I'm now sleep deprived. It's that brilliant.

92

HEAVY METAL

Killer robots invade Sweden in **GENERATION ZERO**, an open world shooter from the creator of *Just Cause*. *By Andy Kelly*

The year is 1989 and killer robots have invaded the Swedish countryside. This is the undeniably unique premise of *Generation Zero*, an open world shooter from *Just Cause* developer Avalanche. But this is a smaller production than we're used to from the studio. The map is massive, because Avalanche maps always are, but the game itself is a surprisingly lean affair.

You play as one of several silly 1980s archetypes: punk, jock, nerd, and so on. You have a few loose goals including finding out why everyone is missing, locating survivors, and uncovering the truth behind the invasion. But you're never really steered down one particular path. You can make your own goals and explore at your own pace, either alone or with three friends.

Scattered across the map are towns, farms, bunkers, and more exotic locations including a military base. Here you'll find groups of roving robots to kill and loot to scavenge. Occasionally you'll pick up missions, which are rarely more complicated than finding a place and looting it. But I do like how there are no objective markers on the map. You have to read clues and engage with the environment to find what you're looking for. The direction an abandoned car is facing in might point towards a place worth looting, for instance. It's a nice way of encouraging exploration.

But that's about the size of the game: walking from location to location, battling machines, and collecting loot. Sometimes you'll find an audio log or a document that'll fill in some of the opaque storyline. But mostly it's just you, a subtle synth soundtrack, the wind blowing through the trees, and the eerie metallic screech of angry robots. It's a very slight game, almost feeling like an Early Access release at times. But there is something oddly compelling, and Swedish, about its minimalism.

The world is beautifully realised, particularly the contrast of menacing

sci-fi robots with pastoral Scandinavian scenery. The dynamic weather and day/night cycle constantly shift the atmosphere around you, from hazy golden sunsets to midnight lightning storms. And as you explore you'll encounter leafy forests, rugged coastlines, quaint villages, and rolling farmland – all corrupted by the presence of those sinister machines who wander the landscape searching for flesh to tenderise.

Some machines scamper around on all-fours like one of those Boston

Co-op is essential for taking down larger targets

NEED TO KNOW

WHAT IS IT?
An open world shooter set in 1980s Sweden

EXPECT TO PAY
£30

DEVELOPER
Avalanche

PUBLISHER
In-house

REVIEWED ON
GTX 1080, Intel i5-6600K, 16GB RAM

MULTIPLAYER
1-4

LINK
www.generationzero.com

Dynamics robots gone bad. Others are the size of a truck, launching rockets at the slightest provocation. There are six in total, each with their own distinctive weapons, behaviour, and weaknesses. The Hunter is the scariest – a tenacious bipedal giant with a blade on one arm and a cannon on the other. You can fight most of them on your own, but co-op is essential for taking down larger targets such as the appropriately named Tank.

LONE WOLF

Alone, *Generation Zero* is an incredibly tense, almost stealth-like experience. I found myself mostly sneaking past enemies, hiding in the trees waiting for patrols to stomp past or using gadgets to distract them. Throwing flares, fireworks, and boomboxes (it's the '80s remember) will lure curious robots away, giving you a chance to slip past undetected.

With friends you can be a lot more adventurous, tackling groups of robots head-on, creating tactics on the fly. In one session I climbed a church steeple with a sniper rifle and a friend used flares to lure enemies into my line of fire. Having people to speak to also makes those long hikes across the map more entertaining. But the game's limited content, and a general lack of interesting systems to experiment with, means even multiplayer starts to feel dull.

Generation Zero isn't very good, but I do keep coming back to it. There's something about that world that makes me want to spend time there. With updates it has the potential to mutate into something far more interesting, but for now it's an impressive setting with a slight and uninspired shooter squeezed rather clumsily into it. ■

BOT STUFF Know your enemy



TICK

Small and agile, these tiny bug-like robots will launch themselves at you if you get too close and then self destruct.



SEEKER

These floating robots aren't very dangerous, but if they spot you they alert other bots to your presence. Kill them quickly.



RUNNER

Four-legged robots who work in packs. A shot to their fuel tanks will make short work of them, but they're lethal in numbers.



HUNTER

Intelligent and quick, these robots are formidable. From afar they attack with a machine-gun; up close, a knife-arm.



HARVESTER

These robots won't attack if you let them to go about their business, but they will defend themselves if provoked.



TANK

The top of the robotic food chain, these behemoths are heavily armed and armoured, and equipped with rocket launchers.

PC GAMER VERDICT

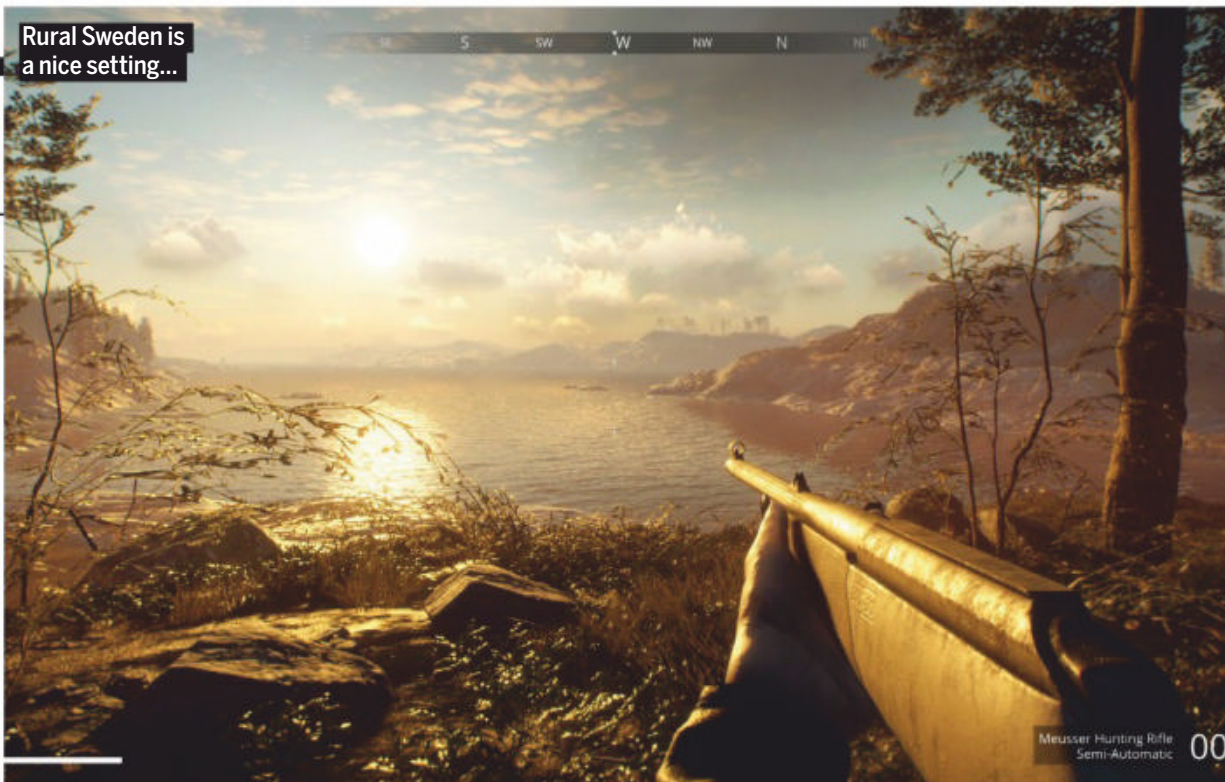
Menacing robots, a gorgeous world, and an intriguing premise, but ultimately too minimalist for its own good.

67

Co-op undeniably elevates the game.



Rural Sweden is a nice setting...



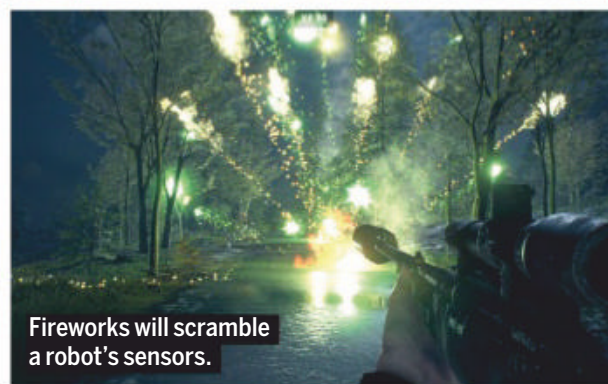
...At least until the killer robots show up.



One of the playable '80s stereotypes.



Fireworks will scramble a robot's sensors.



KILL MY DARLING?

Clementine's journey comes to a bumpy end in
THE WALKING DEAD: THE FINAL SEASON. By Chris Schilling

Remember the last episode of *Lost*? Where several seasons' worth of narrative groundwork was abandoned in favour of a series of nostalgic flashbacks and weepy reunions? You can see the sense in it – having written themselves into a corner, the show's creators decided to tug at heartstrings. *The Walking Dead: The Final Season* attempts to pull off a similar trick. Unlike *Lost*, it's a missed opportunity to connect more fully with its past.

Whether this is close to the send-off that was originally planned for Clementine is hard to divine – but surely her story wasn't set to wrap up quite like this. It hardly needs repeating that the team that finished this season isn't the same as the one that started it (they're credited as the "still not bitten" team, which feels like a crass misjudgement in the circumstances). Penultimate chapter Broken Toys doesn't

seem to bear too many obvious scars from Telltale's sudden, awful closure, suggesting the bulk of the work had already been done. Instead it's the last, crucial chapter of Clem's story that feels curtailed and compromised.

Until then, the final season makes a case for being the strongest since the first. Our increasingly world-weary protagonist has grown from a timid child to a tough-nosed survivor, prepared to do whatever it takes to keep her friends and loved ones alive. Here her story comes full circle –

she's now the adult half of a surrogate parent/child relationship, imparting vital life lessons to the orphaned AJ as Lee did to her in *Season One*. You have a little more input in the rules you establish for the kid, but

otherwise we're on similar narrative ground – with one small but significant difference. Born into a violent world, AJ has never known what life was like before the zombies arrived. As a result, he has a twisted

sense of right and wrong.

At times that makes for great drama. You're often reminded that he's just a kid, though his outbursts make him a very different proposition from young Clementine. It's a risky move – hardened by circumstance, he can be difficult to warm to, but trying to address his warped idea of morality leads to some thought-provoking moments as Clem is forced to consider the hypocrisy of her own behaviour. And you'll soon learn that leading by example only goes so far.

The final season makes a case for being the strongest since the first

NEED TO KNOW

WHAT IS IT?
Award-winning narrative adventure reaches the end of the line

EXPECT TO PAY
£19 (Epic Games Store)

DEVELOPER
Telltale Games/
Skybound Games

PUBLISHER
Telltale Games/
Skybound Games

REVIEWED ON
Intel Core i3-8350K
CPU, 8GB RAM, GeForce
GTX 1060

MULTIPLAYER
No

[www.skybound.com/
telltale-the-walking-
dead/season-4-the-
final-season](http://www.skybound.com/telltale-the-walking-dead/season-4-the-final-season)

Your choices can be misinterpreted in ways you don't expect – most obviously in a disturbing scene right at the end of episode one, a jaw-loosening cliffhanger that proves, after all this time, *The Walking Dead* is still capable of shocking us.

It also handily solves the second season's biggest issue, where Clem somehow became the de facto leader of a bunch of adults. Now, having fallen in with a group of school-age survivors at an institute for troubled youngsters, it makes more sense that she's the decision-maker. She has, after all, spent longer in the world beyond the boundaries these resourceful kids have established. And the story pumps the brakes just often enough for us to get to know them – though as ever, it's best not to get too attached.

TEARY-EYED

As usual the writers get to decide which relationships are important, though this time you're given the option of beginning a tentative romance with the introverted Violet or laid-back Louis, offering some welcome moments of tenderness amid the tension. Regardless of your choice, Clem's love interest is largely sidelined in the later stages. But that's nothing compared to an 11th-hour surprise that feels like a total cheat.

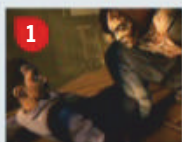
Yet I'd be lying if I pretended, as with *Lost*, that I stayed dry-eyed until the credits – though much of that is down to the efforts of those who never got the opportunity to put the finishing touches to Clementine's story. She may have been too good a character to be left in limbo, but this concluding chapter leaves you wondering what might have been had the storytellers at Telltale still been around to close the book. ■

PC GAMER VERDICT

An otherwise strong season drops the ball at the death. Clementine really deserved better.

70

THE RANKING DEAD Telltale's top six, from best to worst



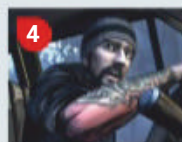
SEASON ONE
That award-winning debut season remains top dog. Lee and Clem's story made us gasp and weep in equal measure.



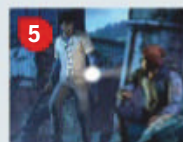
SEASON TWO
Not far behind, with a brutal, tragic ending and arguably the series' best villain in Michael Madsen's Carver.



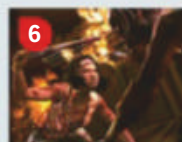
THE FINAL SEASON
Doesn't stick the landing, but otherwise balances character development with shocks.



400 DAYS
Five short stories intertwine in this add-on. Short but sweet, with some of the series' tightest scripts.



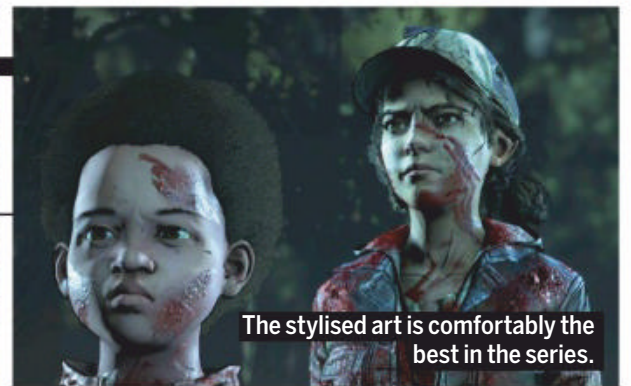
A NEW FRONTIER
A glimpse at Clementine through another character's eyes, but the scenarios are all too familiar.



TWD: MICHONNE
Samira Wiley is terrific as the surly sword-wielder, but this spin-off is hardly an essential play.



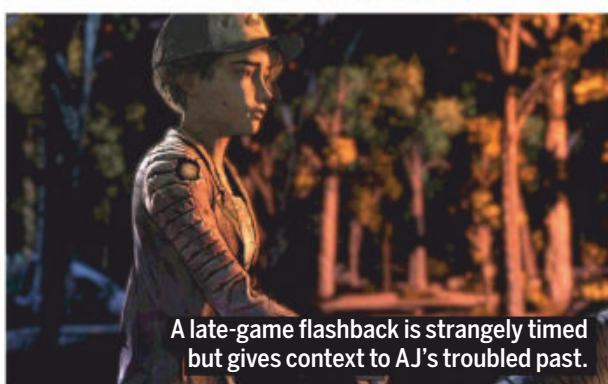
It wouldn't be *The Walking Dead* without a rickety bridge to cross.



The stylised art is comfortably the best in the series.



Action sequences are well-staged but there's no real punishment for failing them.



A late-game flashback is strangely timed but gives context to AJ's troubled past.



Collectable items can be placed in Clem and AJ's room at the school.

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PCGAMER.COM

THE WRIGHT STUFF

The **PHOENIX WRIGHT: ACE ATTORNEY TRILOGY** brings one of the best visual novels to PC. *By Malindy Hetfeld*

Before I became familiar with Japanese media, I associated courtroom dramas with the no-nonsense rulings of Judge Judy or the uber-serious suspense of A Few Good Men. Meanwhile, in Japan’s fictional courtrooms, the silly and the dramatic is found in equal measure, making it a hugely popular genre. This is especially true of *Ace Attorney*, which imbues its trials with all the visual and stylistic trappings of an engaging anime serial.

Ace Attorney is the latest in a line of HD remasters of Capcom’s previously console-only games. Prior to *Ace Attorney*, hardly any visual novels were officially localised, and even now it’s still a niche that more commonly brings to mind dating games over adventure. *Ace Attorney*’s courtroom setting and goofy humour still set it apart, both from visual novels and games at large. Trials range from ridiculous to genuinely suspenseful. Rather than just a collection of selectable player reactions, Phoenix Wright is one of the few main characters in this type of game who gets to freely express himself. While he often seems overwhelmed by the shenanigans around him, he genuinely cares, making me care in turn.

You learn everything you need to know to become a winner in the courtroom during your very first case. Fresh from law school, defence attorney Phoenix has promised to get his best friend Larry Butz acquitted of murder. Your clients are generally

hapless people like him, and in order to keep them out of jail, you have to identify the true culprit and then – to quote Wright – “put the pressure on until they squeal”. First you listen to a witness’s testimony, then pick it apart statement by statement during cross-examination. You can ask a witness to clarify (“Hold it!”) or expose inaccuracies and straight-up lies by presenting a piece of contradicting evidence (“Objection!”).

All evidence is handily collected in the court record, which you can access at any time. Presenting evidence can be frustrating however, because not only do you have to present the right piece, it also has to be presented at the right moment.

If a witness is elaborating on a prior statement in their next sentence, either seem like viable moments to object, but the game will only acknowledge the right sentence to do so. Get it wrong, and you’ll be penalised and lose part of a health bar. The more that’s on the line, the more health you stand to lose, but

Phoenix has promised to get his best friend acquitted of murder

NEED TO KNOW

WHAT IS IT?
A visual novel that brings anime to the courtroom

EXPECT TO PAY
£30

DEVELOPER
In-house

PUBLISHER
Capcom

REVIEWED ON
Core i-5-8400, GTX 1060, 16GB RAM

MULTIPLAYER
No

LINK
www.ace-attorney.com

you can save at any time from the options menu.

DIAGNOSIS: MURDER

Starting with the second of 14 episodes, you also put your Sherlock Holmes hat on and do some sleuthing ahead of a court date. Looking for clues out in the world is an unwieldy process, as you have to move from screen to screen in a certain order and randomly click on just about anything that could be of interest. Sometimes you move about aimlessly without knowing what to do next until a person appears out of nowhere or you’ve finished all available conversations.

Trials soon turn into lengthy affairs over multiple days, in which dramatic revelations and new evidence regularly provide interesting twists and turns. Yet *Ace Attorney* isn’t just a ‘case of the week’ serial – over time you come to know an eclectic cast of main characters whose backstories intertwine with the seemingly unrelated cases you’re trying to solve. Many episodes over the course of the trilogy involve Wright’s assistant Maya Fey, who belongs to a family of spirit mediums who often help with investigations by, for example, channelling the dead. Police detective and lovable village idiot Dick Gumshoe is another regular. Of course no trial would be complete without prosecuting attorneys, Wright’s opponents in court. In the first game, this role is filled by Miles Edgeworth, a delightfully sour-faced fop who wears actual cravats as part of his everyday outfit. Edgeworth is my new favourite character, because how many men do you know, fictional or otherwise, who can rock a magenta suit and a tragic backstory?

Edgeworth provides a lot of the overarching story’s backbone, as do the Feys. *Ace Attorney* does put a lot of stock in character development, and watching Phoenix’s relationship with his friends grow over time is heart-warming. As much as these

COURTROOM EMPIRE *Try these next*



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Enjoy the second-hand embarrassment of people wearing really bad wigs.



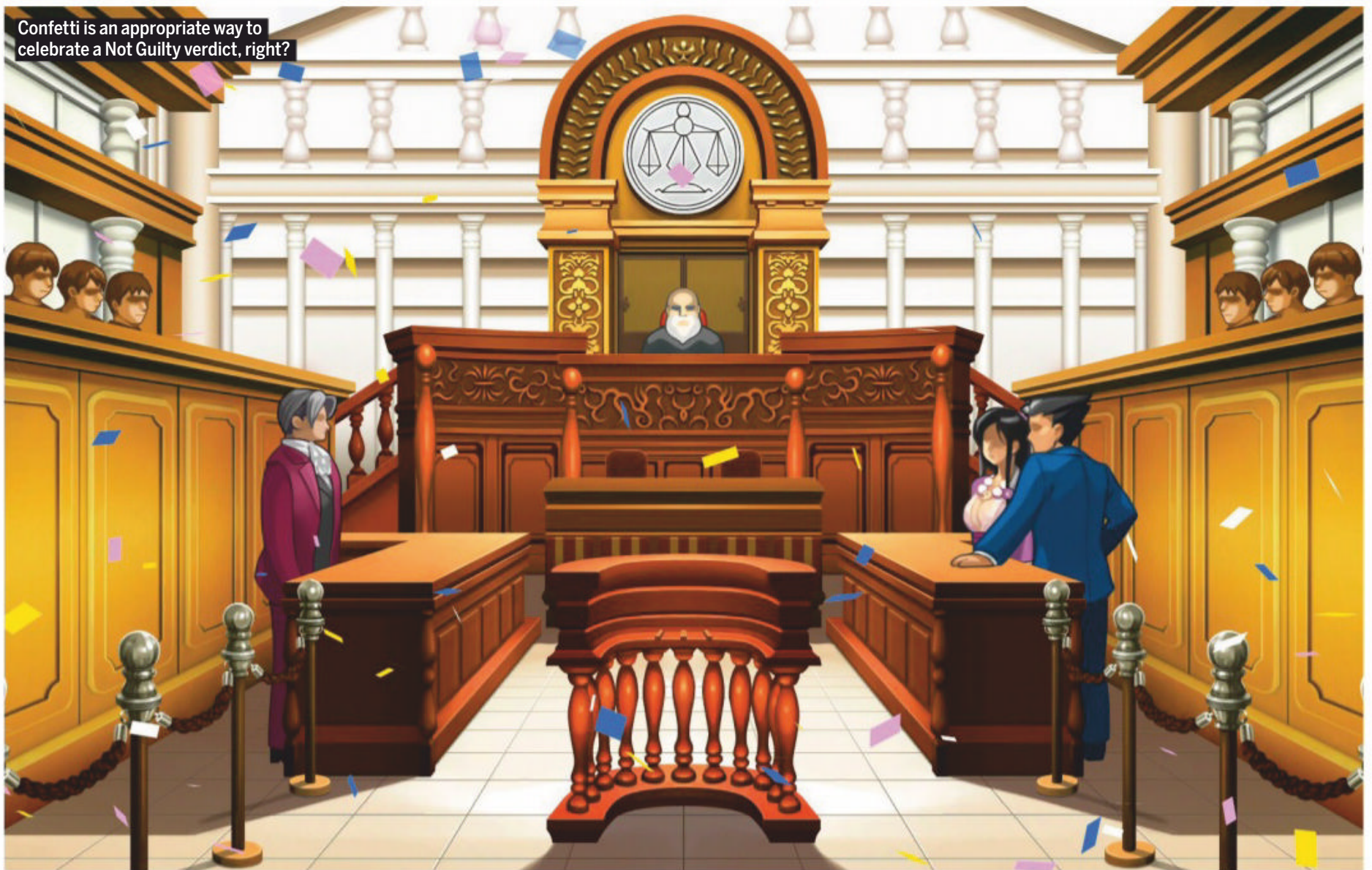
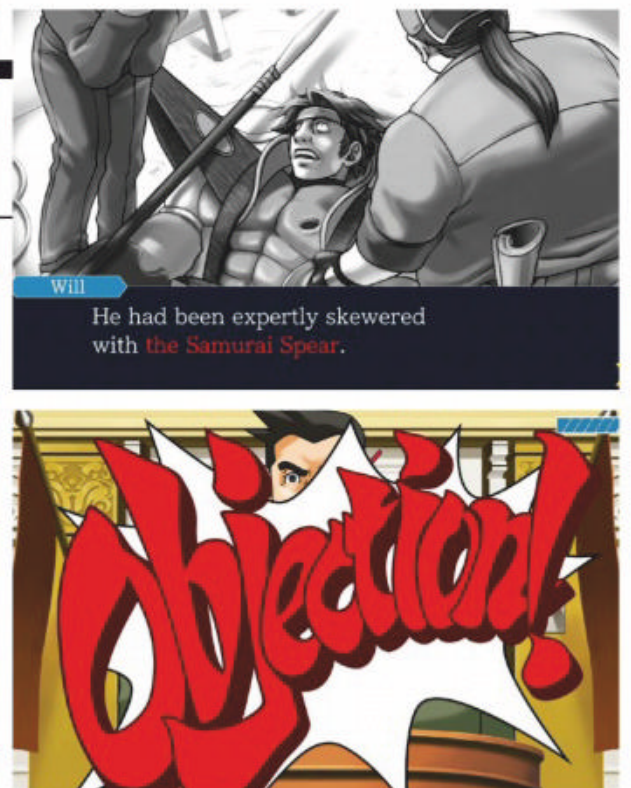
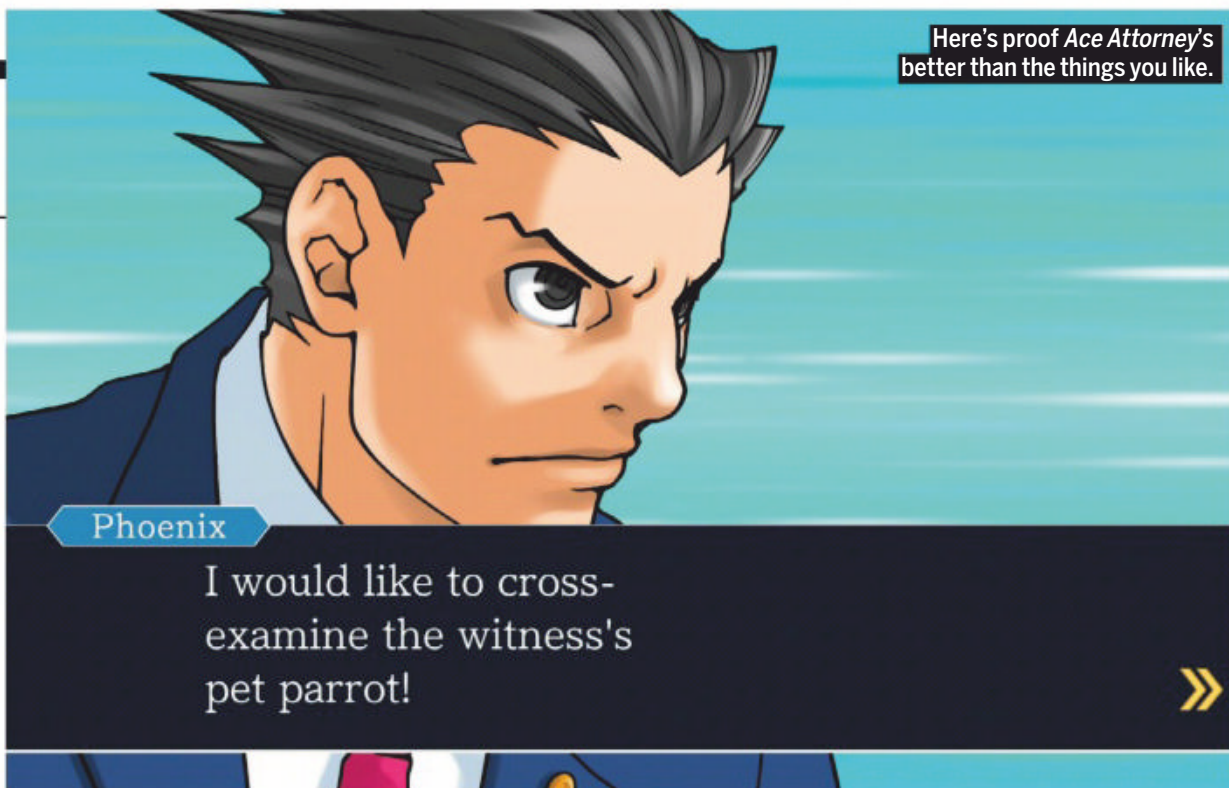
ANIME
Debate the anime’s faithfulness with your “friends” on social media!



MANGA
Follow your favourites in all-new cases with the manga adaptation.



STAGE MUSICAL
Learn why everything is better with women in this all-female musical.



It's great watching a dodgy witness crack.



Sahwit

Y-you with your "objections," and your "evidence"... Just who do you think you are!?



Esc Options

Tab Court I



One episode forces Wright to choose between his ideals and his friends



Maya

But he definitely did it. Murder. At least once. Maybe twice.



Visualisations and crime scene photos help to keep you engaged.



Byrde

That's why when you question witnesses, you have to find and expose their lies!



Law is happening very fast right now.

Edgeworth

Can you prove that? I THINK NOT!



» characters grew on me, though, the individual cases remained my main source of enjoyment over the course of the three games. Still, I appreciate the interplay between random trials and more personal stories.

MURDER, SHE TRANSLATED

The localisation is *Ace Attorney's* actual star. *Ace Attorney* is a hilarious game, highly dependent on wordplay and overdramatic witnesses being completely oblivious to the gravity of the situation they find themselves in. There's more than one running gag that stretches over several episodes, and like Sega's *Yakuza* series, it's often just Wright's deadpan reactions to everyone else's outlandish behaviour that makes following each interaction so much fun. The localisation confers each suspect's linguistic ticks and is vital to helping you find out just when they say something that doesn't quite add up.

To help illustrate the scope of influence the localisation has, you just need to look at the names in the series. Each character's name is usually a pun. Take Phoenix Wright – his first name was chosen for its heroic sound, then modified into “Nick” by several characters, becoming a literal nickname. His original name is Ryuichi Naruhodo, and his surname is actually the Japanese way to say “right” as an affirmation. To justify using English names however, localisation moved the setting of the entire game. It's a drastic decision in order to accurately localise as many puns as possible, especially when the Japanese setting becomes increasingly obvious in the second and third games. Still, the frankly ridiculous puns give *Ace Attorney* its own charm.

When it comes to having you uncover evidence, *Ace Attorney* uses a curious combination of very eagerly pushing hints onto you (complete with marking text passages of interest in red), and staying completely schtum. Every piece of evidence you collect will become relevant at some point, but sometimes you only find out by trial and error what Phoenix is referring to. When situations enter the territory of becoming completely absurd, cases turn into guesswork. The very creative twists that make each criminal case so interesting are also the ones that are so difficult to puzzle out. Still *Ace Attorney* avoids feeling punishing. During my



WITNESS ME

Some of the whackiest characters on the stand



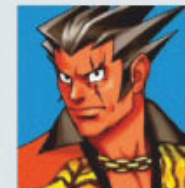
WENDY OLDBAG

A typical elderly woman, Wendy calls young people “whippersnappers”.



MAX GALACTICA

He may look like Kefka from *Final Fantasy VI*, but Max is surprisingly sweet.



FURIO TIGRE

He's what happens when *Ace Attorney* spoofs more action-oriented anime.

playthrough I only saw the game over screen once.

Solving a puzzle feels great, thanks to the smug way in which Wright explains his deductions. *Ace Attorney* would likely be half as long if Wright didn't announce his breakthroughs in the most dramatic fashion imaginable, followed by a lengthy explanation to make sure everyone's on board. “You want to know what this business card signifies? I'm going to tell you what it signifies!” Clickbait, in my games? Thankfully, a simple button press is enough to skip to the end of a sentence or to have the text run slightly faster.

THE A-NIME TEAM

Of course *Ace Attorney* wouldn't be the same without these antics. With the smoothed-out sprites in these HD remasters, the games look more like an anime than ever before.

Ace Attorney also leans heavily on the tropes associated with anime than other Japanese games. It's designed like an actual TV series, complete with posters for each episode, end cards that say “to be continued”, flashbacks and filler episodes.

Anime calls for drama and highly unlikely events the same way it calls for characters with candy-coloured hair, and from murder to ghostly possession and kidnapping, *Ace Attorney* has it all. All the screaming, copious amounts of screenshake (which you can disable) and character's going “what's the meaning of this?!” can get a bit much, especially when the formula remains unchanged across three games, but it is satisfying to watch suspects become increasingly desperate.

Justice For All adds additional elements to the overall formula – the option to use character profiles as evidence, finally putting them to use, and the Magatama, a mystic stone that tells you if someone is lying to you during investigations. This allows you to object to people's tomfoolery outside the courtroom and get witnesses to give up their secrets. These are small additions to existing gameplay rather than anything new. Had Capcom at any point decided to get rid of them again, I wouldn't have missed them.

Game number three, *Trials and Tribulations*, is the weakest of the three games. Being 50 percent flashbacks, it adds context to events

discussed in prior games, but the pacing is off. To my mind the episodes would have worked better in between more exciting trials to help keep thing ticking. The tutorial episodes at the beginning of each game

are also definitely weaker than others – they take place entirely inside the courtroom and are full of hints.

Despite this, *Ace Attorney* hooks you the same way any good crime serial does: you want to know whodunit, and how, and once you do, you want to point your finger at the criminal in a heroic manner and *laugh*. I dare you not to fall in love with *Phoenix Wright: Ace Attorney* when the verdict hits the screen in big, bold letters, and the room erupts into cheers and confetti. ■

Every piece of evidence will become relevant at some point

PC GAMER VERDICT

Just what a visual novel should be, fun characters and the rush of solving mysteries make you eager to keep going.

83

Pawnbarian



HARDCORE

Chess meets *Rogue* in the delightful **PAWNBARIAN**. By Tom Sykes

One of the best things about chess is the fact that John Chess isn't around to launch a copyright strike every time someone dares tinker with his creation. No, he died thousands of years ago, having spent his chess money on an extension for his Saxon bungalow. The horribly named *Pawnbarian* is the latest indie to meld the classic board game with procedural generation (see also: the much more delightfully named *Chogue*), and it's by far the best.

It's going to take some explaining though, as it's not very good at actually telling you how to play it. *Pawnbarian* is a roguelike where you have to kill every enemy before you're allowed to advance to the next procedurally jumbled board. There are no weapons to wield, or treasures to loot, but you have a variety of attacks and movement options at your disposal, each based on an iconic chess piece.

By activating the pawn card, for example, you can make your barbarian move forward one piece, or attack and kill an enemy diagonally. The knight card will have them moving or attacking in an L-shape, while the bishop causes them to slide diagonally, until they either hit an enemy or reach the board edge. And so on for every chess unit, from the king to the trusty rook.

Those cards are doled out randomly at the start of every turn, a system that works well enough but occasionally results in some bum hands (such as four pawns) where your available options are sorely limited. However, tilting the game in your favour is your ability to make two turns for every one of the enemy's – turns you'll desperately need if you're to survive this challenging game.

So you'll battle orcs, ninjas, and annoying spore clouds

While your goal in each stage is to defeat the enemies, your most pressing concern will be to evade the red target marks covering much of the game board. These marks indicate spaces where you'll be attacked during the next turn, if you're not savvy (or lucky) enough to be able to move the barbarian away. But every turn spent evading is one you could have used to attack –

NEED TO KNOW

WHAT IS IT?
A roguelike where you obey the rules of chess

EXPECT TO PAY
Free

DEVELOPER
j4nw

PUBLISHER
In-house

REVIEWED ON
AMD A4-6300@3.7GHz, 6GB RAM, GeForce GT 610

MULTIPLAYER
None

LINK
bit.ly/Pawnbarian

providing you have enough health to survive your enemies. There are several monster types, interestingly not drawn from chess but from the general fantasy milieu. So you'll battle orcs, ninjas, and annoying spore clouds that spawn more monsters upon defeat. Hell, there's even an end-game boss fight.

PAWN TO KING ORC FOUR

It's a well-thought-out system that already feels fairly robust, considering the game was made in just a week for a game jam, but even so I'm pleased to hear that it's being extended into a bigger release. The procedural generation is sometimes lacking, leading to occasional unfair dead ends later in the game.

Still, I highly recommend this strategic mixture of chess and rogue, two games that clash impressively well here. *Pawnbarian* takes choice parts of both, but feels thrillingly like a new creation, and one that may one day devour hours of your free time. ■

PC GAMER VERDICT

A tactically rich dungeon crawler, with a few procedurally generated kinks that could be ironed out.

82

ARCH ENEMIES

Death is on the cards in **ARCHES**. By Tom Sykes

If you've finished the new *Bard's Tale*, and you're looking for another old-fashioned dungeon crawl, *Arches* should scratch that itch, at least for a bit. Made for this year's 7-Day Roguelike Challenge, it's a turn-based RPG where every level is randomly shuffled, from the layout to the many beasties lurking inside. The most striking thing about it is the card-themed artwork, which is simple but stylish, bursting with colour, and with handsome arches waiting around nearly every bend.

Unlike RPGs that shower you with loot, your sole piece of equipment here is your trusty club. You can press the space bar beside an enemy to whack them on the noggin, with the range depending on which end you're holding the weapon by. For some reason, your character insists on flipping the club after every attack –

the blunt end deals more damage, but only on the adjacent tile, while the pointy end attacks more weakly, but at a safer distance of two tiles away.

It's a mechanic the game never informs you about, but that adds a welcome (if thin) layer of strategy to the otherwise fairly basic dungeon crawling. Combat was suddenly manageable after I discovered this system, as I could tactically position myself, and my club, to better stand a chance against the tougher enemies on each floor.

With its merciless battles, its no-frills exploration, and the lack of variety in the level design (each floor is pretty much the same), I was warmly reminded of the days of *Wizardry* and *Dungeon Master*. Like those classics, it's the exploration that makes *Arches* satisfying, although you'll likely tire before fully mapping out its attractive labyrinth. ■

65



NEED TO KNOW

DEVELOPER
Jonathon Yule

PUBLISHER
In-house

LINK
jonathonyule.itch.io

BLOOD TYPE

Be a keyboard warrior in **TYPE KNIGHT**. By Tom Sykes

The pen is mightier than the sword in this sidescrolling action game, which has you typing words to battle skeletons and the like. It's basically *The Typing of the Dead*, but two-dimensional and with less meaty enemies. However, it might be slightly more useful if you're hoping to improve your typing speed.

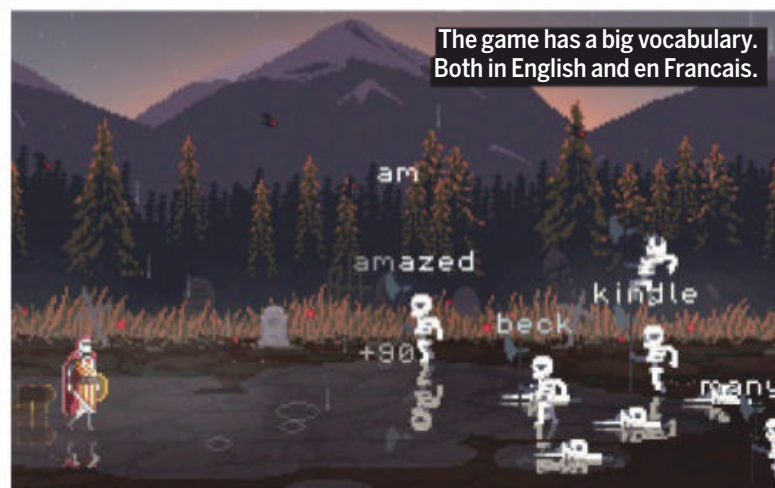
The setup is simple – a solitary knight roams a beautifully illustrated fantasy land, where the dead have inconveniently risen from their graves. To send them packing, you have to repeat the random words that pop up over their heads, typing them out letter by letter with your keyboard. The enemies and words come thick and fast, before too long, rewarding your speedy typing skills with a) your continued survival, and b) with a higher score if you can keep the combo going.

You're mostly battling swarms of braindead skeletons here, but the action is occasionally interrupted by a challenging boss fight, or by pesky bat things that zip across the screen. There's no end point, so really it's all about that high score – about testing the limits of your typing prowess.

Type Knight is pretty accommodating in that regard, thanks to its trio of difficulty levels, and the option to customise its massive dictionary to your liking. You can disable whole rows of the keyboard if you're having particular trouble, consult stats including words-per-minute over time, and even switch to French if you'd rather battle some Norman skeletons.

It's a rare game that allows you to wallop the undead while working on your typing skills. Even if you're a keyboard master, this polished action game is worth a play. ■

76



NEED TO KNOW

DEVELOPER
chaikaDev

PUBLISHER
In-house

LINK
chaikadev.itch.io



URBAN OUTFITTER

Learning why Rome wasn't built in a day in **CITIES: SKYLINES**

I've played *Cities: Skylines* before, but it's been years. The town I created, named Disappointment, was the classic hamfisted first attempt: miserable, tangled roads, inefficient waterworks, and a populace on the brink of civil unrest. I'm excited to go back. But we have to start with good and bad news. The good news is nobody in my town is unhappy anymore. The bad is it's because I lost the save and Disappointment no longer exists.

Let's remain positive. Starting again is a great opportunity – it feels fresh and clean, like a Christmas deodorant set. I'm excited because so much has been added in my absence: toll roads, tourists, historical buildings; invigorating prospects for a town that won't be worth visiting and that has no buildings to preserve. Bolstered by this fresh promise, I embark on a new adventure. Welcome to Fiasco Parks!

My vision is 'Hobbiton meets Shoreditch' – an environmentally-friendly leafy utopia crammed with artisan coffee shops. I commit to green energy, which makes me feel fantastic – my subjects love it, if only because they can watch reality TV again. But the subtleties of plumbing elude me. And by 'subtleties' I mean that I forget that the sewage and fresh water pipes

can't bisect each other. I bulldoze everything so I can start again – although I'm not sure how you bulldoze a pipe – before I run out of money. The problem is clearly that I've dreamed too big, which is shorthand for 'I've built everything too far apart'. Only one option remains – I abandon Fiasco Parks and embark on a new adventure. Misery Glen is born from the sewage-soaked ashes of my first city.

Misery Glen is born from the sewage-soaked ashes of my first city

Using everything I've learned from my previous attempt I build a tidy little town by the river, compact and dense like canned tuna. There's a wind farm on the hill, so everyone can look up and feel smug about themselves. And it's around now that I also discover that yes, pipes *can* bisect, and sewage and freshwater can run in the same special tubes

NEED TO KNOW

WHAT IS IT?
The most comprehensive city building sim available

EXPECT TO PAY
£23

DEVELOPER
Colossal Order Ltd

PUBLISHER
Paradox Interactive

REVIEWED ON
Intel Core i7-7700 CUP
@ 3.60GHz, 16 GB RAM,
NVIDIA GeForce GTX
1070, Windows 10

MULTIPLAYER
No
LINK
https://store.steampowered.com/app/255710/Cities_Skylines/

without the residents bathing in crap. Fiasco Parks died for no reason, then, but we shall not mourn her. The wheel of progress demands sacrifice.

MISERY LOVES COMPANY

Misery Glen is more of a hamlet than a city, but I love it – more so when I realise that I can zoom in and rename individual streets, giving my residents a whole new reason to hate me. This level of micromanagement is ideal for glib jokes, which makes me feel better about my rotten little borough when I compare it to the glittering metropolises people have built online. In fact, *Cities: Skylines* is so crisp and enjoyable that there's a danger of me not playing the other games for this feature. (If I make a joke about waste disposal in *The Lion's Song*, you'll know why.) It's the sort of game that makes me wonder why I ever stopped playing, before I realise it's 3am and all I can think about is whether an efficient grid structure makes a city less characterful. ■

PC GAMER VERDICT

My early attempts might have failed, but these days *Cities: Skylines* is better than ever.

90

OOZE NEXT

Cannibalism and chimeras in **SLIME RANCHER**

When I selected these games it was under the loose banner of 'chill', which makes me wonder why I included this absurdly stressful gunk wrangling sim. Two reasons: I already know it's great, and those fat, happy slimes make the game look completely harmless.

The benign cuteness leads me to believe I can run a wholesome, organic, slickly-organised operation. It takes approximately 20 minutes for me to realise not all of us were put on this Earth to ranch. I overfill my first corral with pink slimes and the sheer volume means some keep popping out of the top of their enclosure, like pants in an overstuffed suitcase. And, naturally, the first thing these ASBO slimes do is eat all my chickens. Chickens that, I admit, I foolishly decided to keep next to my corrals. At least I only have one thing to worry about now. I attempt to cheer myself

up by diversifying, adding tabby slimes to my mix. Forgetting, of course, that they eat meat and all my chickens have already been devoured.

I try feeding the evil cat slimes some of the pink ones but they're having none of it. And a few fat-handed moments later I accidentally feed a demon tabby the wrong plort, creating some kind of swollen, monstrous, faeces-devouring chonka cat. Like Victor Frankenstein, I take to my bed, praying the whole thing has been some heinous dream.

Unlike Frankenstein, when I wake up there are three more chonka cat slimes, grinning at me. I'm left with no other option: burn everything. I purchase an incinerator and begin The Cleansing. I flambé the slimes until there's nothing left to remind me of my failure but the smell of burnt fur. I'm sure *Slime Rancher* is brilliant. But chill it is not. ■

82

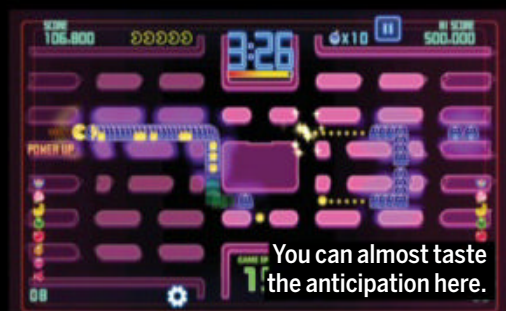


NEED TO KNOW

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DEVELOPER
Monomi Park

PUBLISHER
Monomi Park



PAC-MAN CHAMPIONSHIP ED. DX

This might seem like an odd fit beside the more sedate games on this page. But there's something amazingly zen about *Championship Edition DX*. It feels incredible to round a corner perfectly or expertly arrange a line of munchable ghosts.

Anyone who feels miserable about themselves should play this, because it's impossible to feel bad when you do. It also reminds me how skewed my expectations of 'cool' are: keep your multiple belts and your takedowns and your angry white male protagonist mourning his dead wife, games. My heart belongs to a puck eating dots in a luminous dungeon. ■

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THE ROOM

Is *The Room* relaxing? Sort of. It's similar to how I imagine the box in *Hellraiser* is a pleasant distraction before Pinhead appears and pops hooks into you. But a sense of pan-dimensional terror can't deter me from *The Room*'s sliding panels and doodads. It's a strange one to go back to. I expected to remember every solution, but apparently not – that knowledge is stored in the same locked brain-drawer as old postcodes and how to do long division. But this is one occasion where having a mind like a pasta strainer is helpful, because I get to enjoy all three games as if I'm playing them again for the first time. Who cares if I'm cursing myself? Nobody flipping this switch. ■

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THE LION'S SONG

This is more like it. *The Lion's Song* is the gaming equivalent of drinking a melange coffee in a Viennese cafe while watching someone else's date go deliciously wrong. But, in a nice way. It's simple, heartfelt, and unusual – perfect if you want to stare at digitised mountains while you think about other people's emotions. Also it scores five extra points for having no pink slimes, and another three because the first episode makes a bald, beardy stranger seem like an aspirational love interest. ■

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GROUP TEST

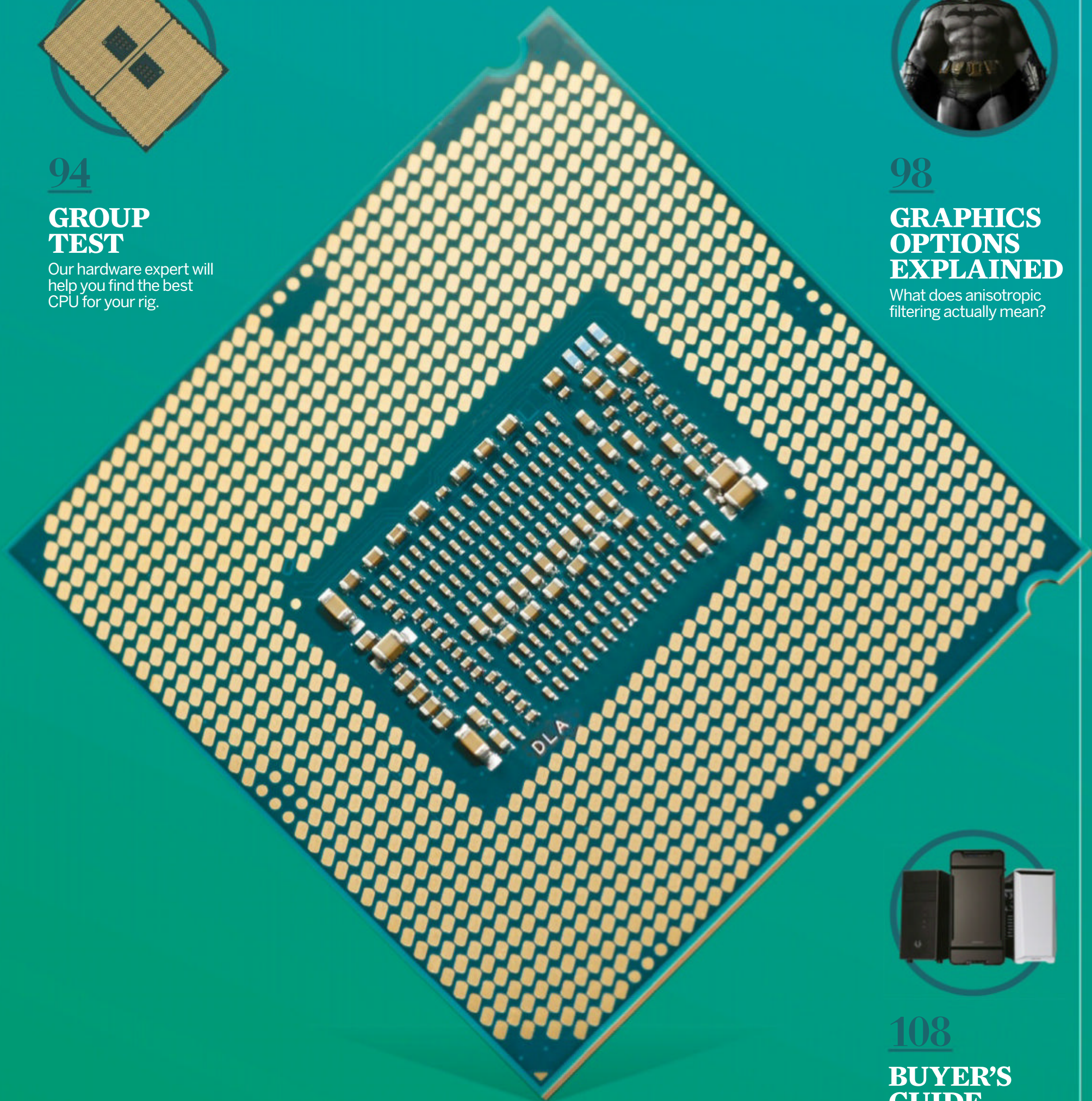
Our hardware expert will help you find the best CPU for your rig.



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GRAPHICS OPTIONS EXPLAINED

What does anisotropic filtering actually mean?



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BUYER'S GUIDE

Get the best PC parts for your build, no matter your budget.

Amazing to think this is what we all look like inside.

GROUP TEST

GAMING PROCESSORS

Here are our picks for the best CPU for gaming, to make the brain of your build strong for slightly less cash.

By Jarred Walton

These days, if you're looking to build a great rig, finding the best CPU for gaming

is arguably the most important thing you can do.

You see, your processor serves as the brain of your gaming PC, sending and interpreting instructions to and from every piece of hardware in your system.

And, for PC gamers, finding the best CPU for gaming can make a world of difference for performance.

▶ **THE CORE I9-9900K
REIGNS AS THE OVERALL
KING OF PERFORMANCE**

HOW WE TEST

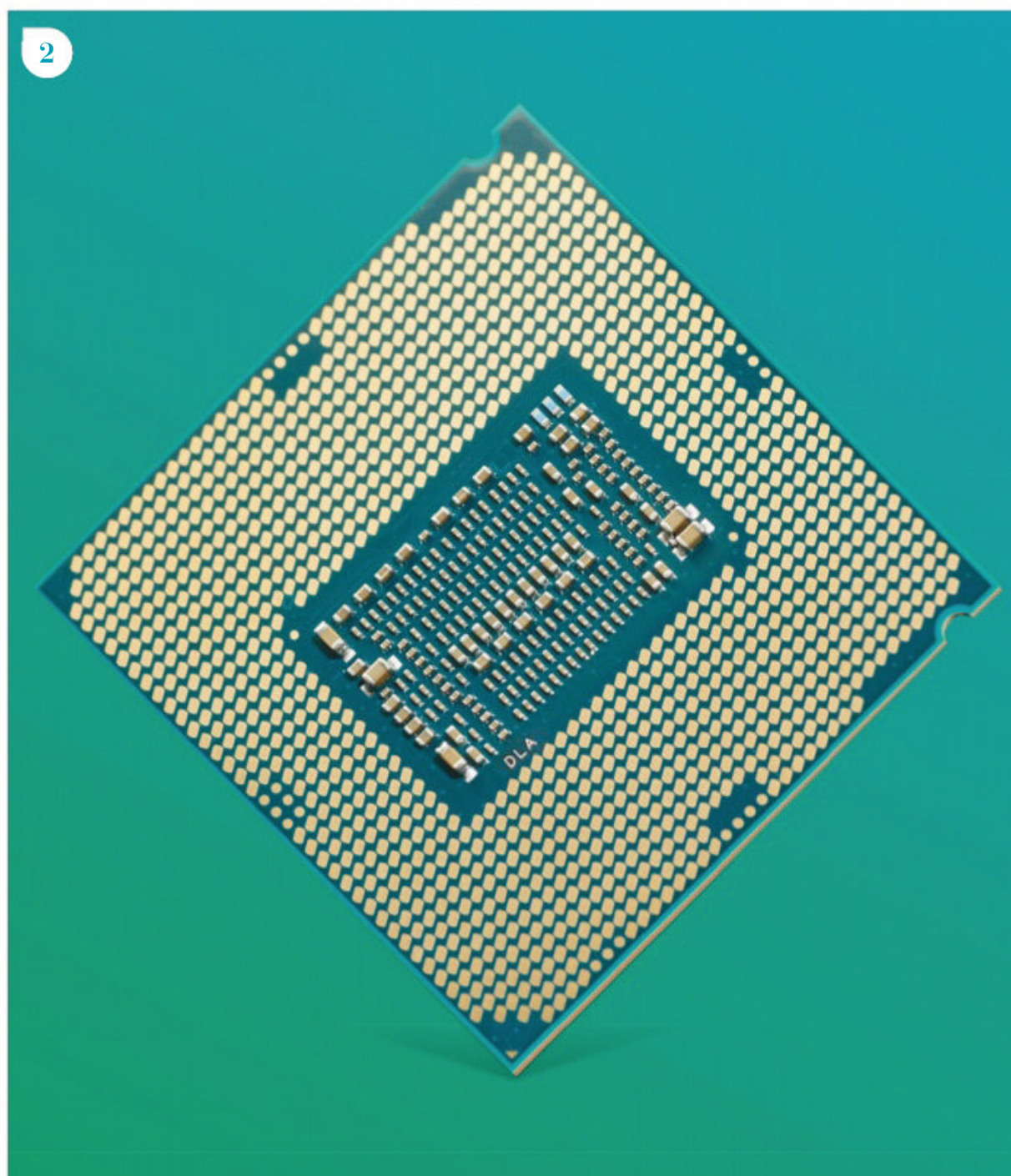
For our testing, we standardised on Nvidia's GTX 1080 Ti FE as our graphics card. At 1080p, this shows the largest difference in gaming performance you're likely to see with current generation GPUs. For memory, we've used high-end G.Skill Trident Z and Flare X DDR4-3200 CL14 memory on all modern platforms, in either 2x8GB or 4x8GB configurations.

The motherboards used in testing include the MSI Z390 MEG Godlike and Gigabyte Z370 Gaming 7 for Coffee Lake, MSI Z270X Gaming M7 for Kaby Lake/Skylake, Asus X299-A Prime for LGA2066, and MSI X99A Gaming Pro Carbon for LGA2011-3 on the Intel side of things. For AMD platforms, we used the Gigabyte X470 Aorus Gaming 7 Wifi for Ryzen, and the Asus Zenith Extreme for Threadripper. Liquid cooling was used on all CPUs.

PERFORMANCE RESULTS

Thanks to the Meltdown and Spectre exploits, and the patches to Windows intended to remedy those exploits, I had to retest every single processor.

Gaming performance is tested in ten games, representing a variety of genres and game engines, all using the GTX 1080 Ti FE. The games are running at 1080p Ultra settings, with 4xMSAA where applicable and FXAA/SMAA otherwise.



Core i9-9900K

INTEL £500

Fastest processor for games, streaming, and more

1 The best processor can mean a lot of things. For pure gaming, the Core i9-9900K is overkill, unless you're planning on an extreme build with a top-tier graphics card. For those that do more than just playing games, however, the Core i9-9900K reigns as the overall king of performance. It's the fastest mainstream CPU for the LGA1151 platform, period.

The Core i9-9900K doesn't have the core counts found of chips like the i9-7980XE or Threadripper 2990WX, but it boasts the highest clockspeed of any current processor, with excellent per-core performance.

Put it in a good enthusiast motherboard and you're likely to see all-core 'stock' clocks of 4.7GHz, with lighter workloads hitting 5.0GHz out of the box.

You'll need to bring your own cooling, which is Intel's approach to all its K-series and X-series processors, and definitely don't skimp. The i9-9900K can draw a lot of power and tends to run hotter than the previous gen, thanks to the extra cores.

PC GAMER VERDICT

- ⊕ Fastest CPU for gaming
- ⊕ Plenty of cores for other tasks
- ⊖ Marginal overclocking headroom
- ⊖ Requires aftermarket cooler

SPECS CORES: 8 / THREADS: 16 / BASE CLOCK: 3.6GHZ / TURBO CLOCK: 5.0GHZ / OVERCLOCKING: YES, 4.9-5.0GHZ TYPICAL / L3 CACHE: 16MB / TDP: 95W / PCIE 3.0 LANES: 16

Core i7-9700K

INTEL £380

Excellent gaming performance at a lower price

2 Intel's Core i7-9700K is an interesting step down from the i9-9900K. It sports the same number of CPU cores, and clockspeeds are similar as well, with most Z390 boards running the chip with all-core turbo speeds of 4.6-4.7GHz.

In games, it's effectively tied with the more expensive Core i9 but costs around £120 less. That's because for the first time, Intel has shipped a Core i7 without Hyper-Threading.

It's a balancing act between price, performance, and features. Compared to the Core i7-8700K, it has 33 per cent more cores,

which generally translates directly into multithreaded performance. Hyper-Threading typically only improves performance by 10-15 per cent, so it's a net win. The lack of Hyper-Threading also means the i7-9700K doesn't get nearly as hot as the Core i9, so you can get by with a good air cooler.

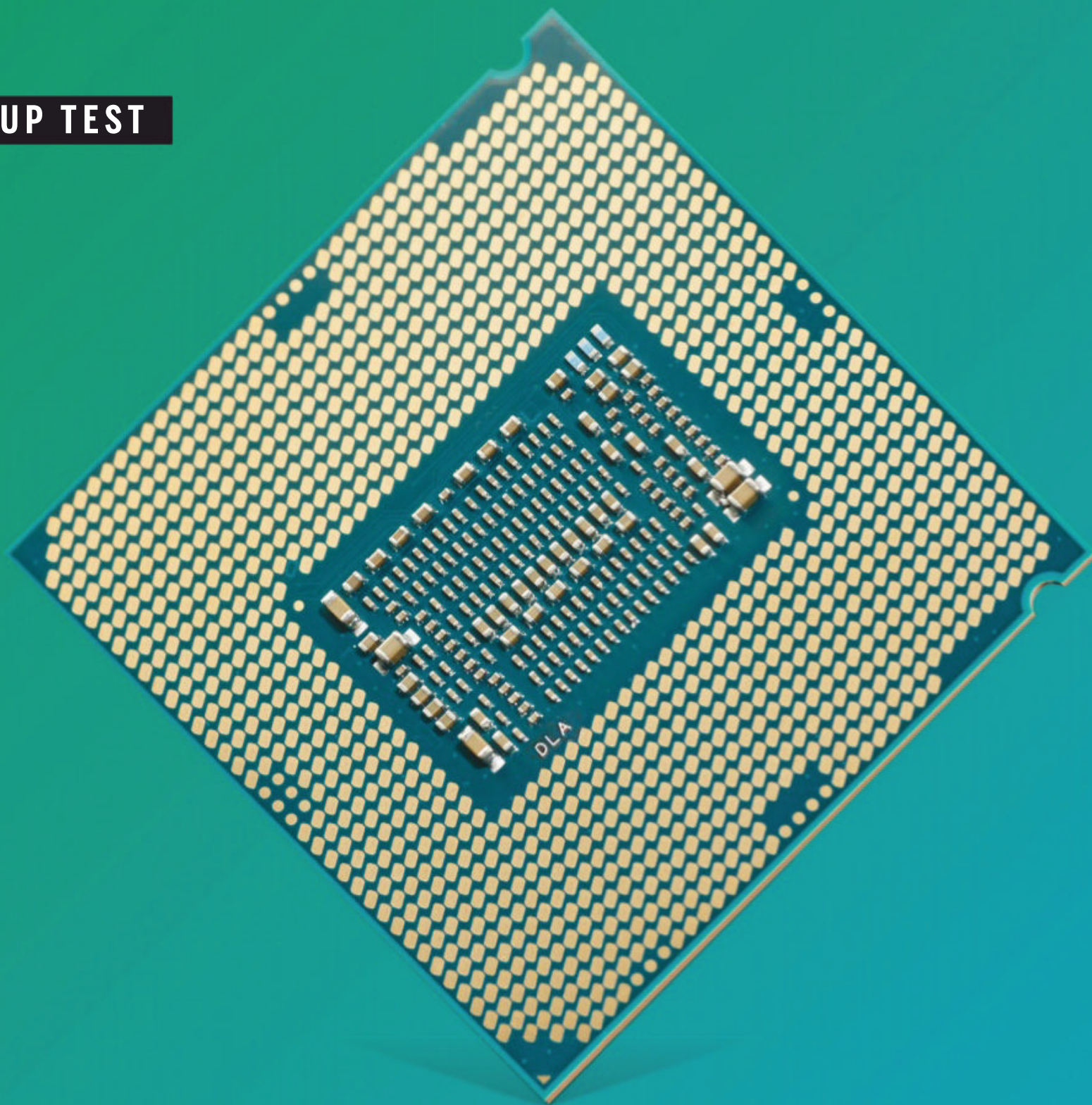
If you're livestreaming, doing video editing, or any other serious content creation work, stepping up to the 9900K makes sense.

PC GAMER VERDICT

- ⊕ Excellent gaming performance
- ⊕ Eight high-speed cores
- ⊖ No Hyper-Threading
- ⊖ Limited overclocking

SPECS CORES: 8 / THREADS: 8 / BASE CLOCK: 3.6GHZ / TURBO CLOCK: 4.9GHZ / OVERCLOCKING: YES, 4.9-5.1GHZ TYPICAL / L3 CACHE: 12MB / TDP: 95W / PCIE 3.0 LANES: 16

GROUP TEST



Core i5-8400

INTEL **£170**

Best mainstream CPU: great performance and price

3 Intel's 8th gen Coffee Lake processors have pushed the desktop Core i5 from 4-core to 6-core territory, and the result is that the Core i5-8400 is an awesome CPU for gaming and other tasks. It has higher clockspeeds than the previous generation, and generally matches the previous generation i7-7700K in performance. As a bonus, you get an appropriate cooler in the box, something I'd like to see as an option with every CPU.

The only 9th Gen Core i5 for the time being is the i5-9600K, which is in most respects the same as the i5-8600K. It clocks

higher and has an unlocked multiplier, but doesn't include a cooler. Given the price of the i5-8400, it's a fair compromise to skip overclocking and get everything you need in one inexpensive box.

In testing, even with a GTX 1080 Ti, the i9-9900K is only about six per cent faster in games at 1080p. The i5-8400 is also still faster than every Ryzen processor for gaming purposes.

PC GAMER VERDICT

- + Fast enough for single GPU
- + No aftermarket cooler required
- No overclocking
- Minor bottleneck for RTX 2080 Ti

SPECS CORES: 6 / THREADS: 6 / BASE CLOCK: 3.8GHZ / TURBO CLOCK: 4.0GHZ / OVERCLOCKING: NO / L3 CACHE: 9MB / TDP: 65W / PCIE 3.0 LANES: 16

Ryzen 5 2600X

AMD **£180**

Our favorite AMD CPU has six cores and a good price

4 If you're after good gaming performance with an eye toward streaming and other multi-threaded uses, but you're working within a budget, AMD's Ryzen 5 2600X is an excellent choice. It delivers nearly the same gaming performance as the more expensive 2700X, thanks to similar stock clocks.

As with the Ryzen 7 2700 to the right, consider this a recommendation for either the Ryzen 5 2600X or the Ryzen 5 2600. Both are very similar, especially when overclocked – I measured only a small 50MHz difference in maximum stable OC

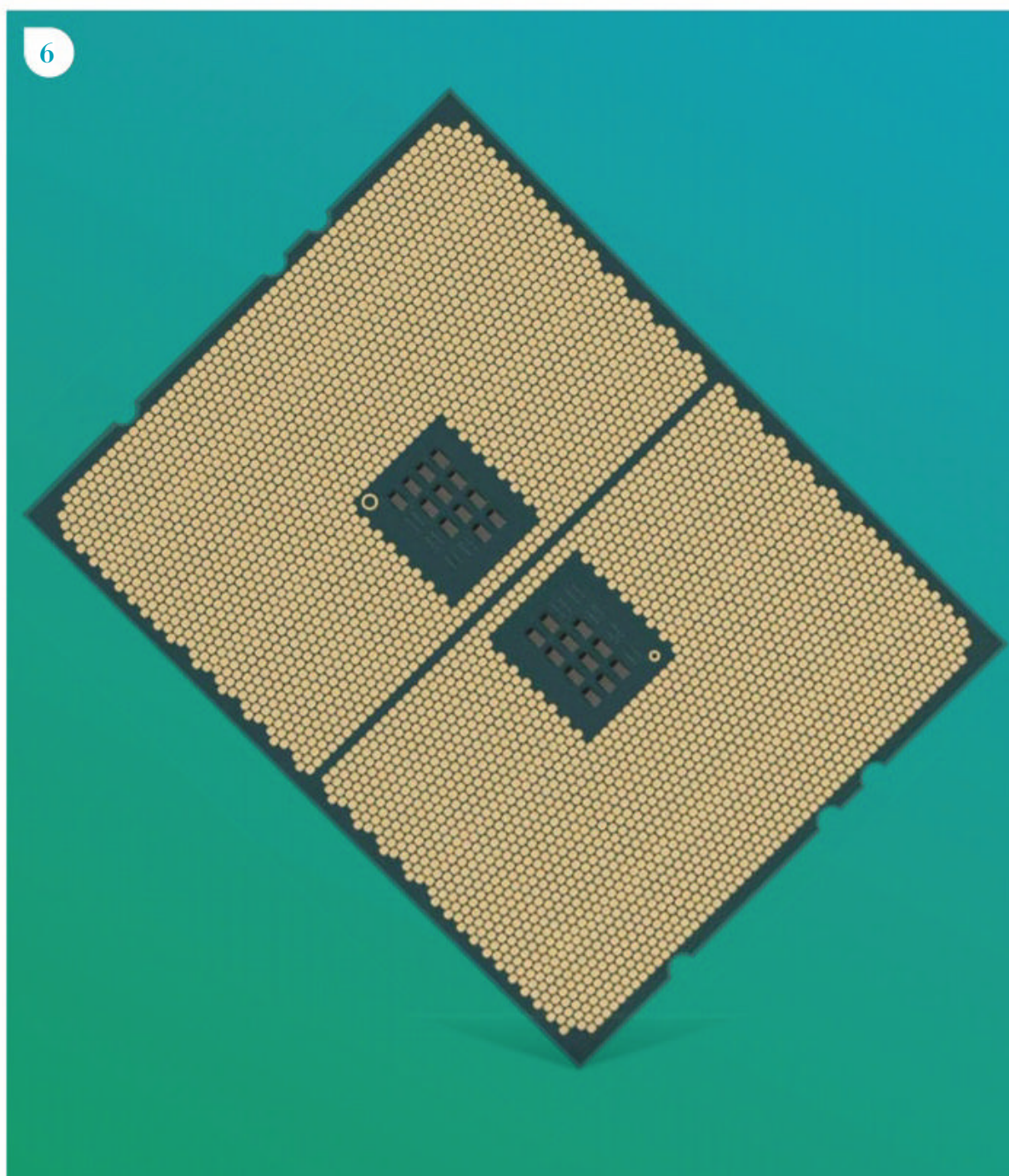
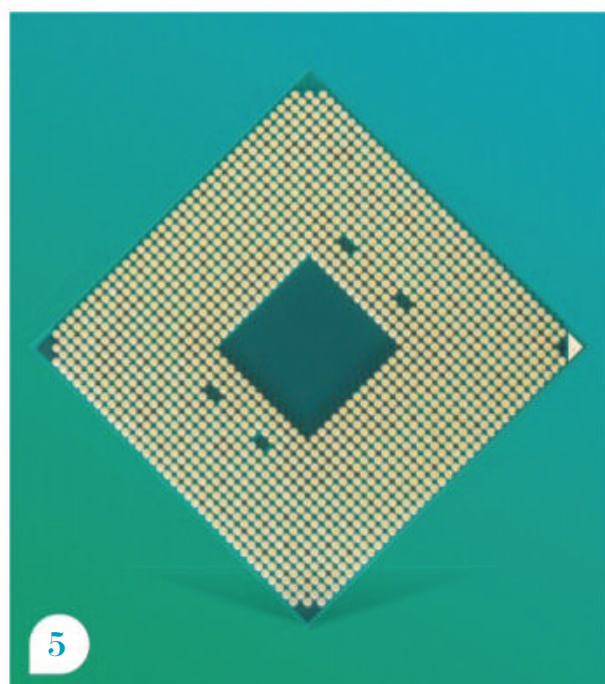
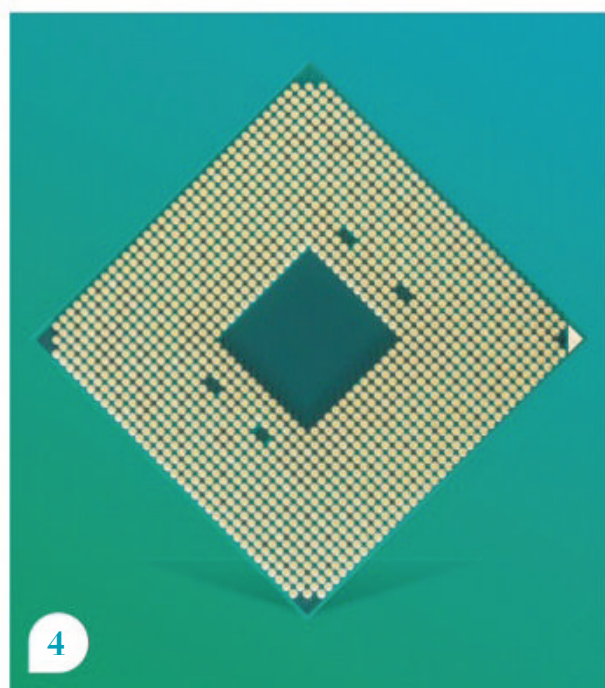
during testing between the two. If you want to run stock, I recommend the 2600X and its higher clocks, but for overclocking the 2600 is the better value.

I've found that the Spectre and Meltdown patches have reduced random IO SSD performance quite a bit on Intel platforms, and AMD is largely unaffected. If you're looking at a fast M.2 drive keep that in mind.

PC GAMER VERDICT

- + Awesome price for 6-core/12-thread
- + Nearly as fast in games as 2700X
- Still slower than Intel in games
- Modest overclocking potential

SPECS CORES: 6 / THREADS: 12 / BASE CLOCK: 3.6GHZ / TURBO CLOCK: 4.2GHZ / OVERCLOCKING: YES, 4.1GHZ TYPICAL / L3 CACHE: 16MB / TDP: 65W / PCIE 3.0 LANES: 20



Ryzen 7 2700

AMD **£227**

All the cores, overclocking, and excellent performance

5 The best AMD CPU for overclockers is the Ryzen 7 2700. At stock, it's a bit slower than the 2700X and even the previous generation 1800X, and it's also slower than the i7-8700K. Add in a better cooler and overclock and you can erase those deficits. If you don't care to overclock, the Ryzen 7 2700X gets you better stock performance for an increase in price, and has a better cooler. Consider this a recommendation for either CPU, depending on which way you lean.

The reason the 2700 is such a great CPU for overclocking is that it's still fully unlocked, just like

AMD's other Ryzen processors. At stock, there's a 65W power limit in effect, which means in heavier workloads the clockspeed can drop to around 3.5GHz. Overclocking can get you back up to around 4.05-4.1GHz with 1.425V in my testing, which is only 100MHz behind the more expensive 2700X.

For non-gaming use, it's basically as fast as any of Intel's mainstream CPUs.

PC GAMER VERDICT

- + Excellent performance
- + Great price for 8-core
- Slower than Intel in most games
- Wraith Spire limits OC potential

SPECS CORES: 8 / THREADS: 16 / BASE CLOCK: 3.2GHZ / TURBO CLOCK: 4.1GHZ / OVERCLOCKING: YES, 4.1GHZ TYPICAL / L3 CACHE: 16MB / TDP: 65W / PCIE 3.0 LANES: 20

Ryzen Threadripper 2990WX

AMD **£1,500**

A monster of a CPU, with 32 cores and 64 threads

6 If you're a professional looking for the absolute fastest multithreaded performance possible in a single socket, look no further than AMD's Threadripper 2990WX.

Thirty-two cores at 3.0-4.2GHz is unstoppable in the right workloads, like scientific calculations and 3D rendering. But there are also weaknesses in the many tasks that simply don't scale to that many cores and threads. Gaming is one of the weaknesses, not because you can't game but because you end up with a platform that generally loses to the Ryzen 7 desktop processors.

As an alternative to Intel's Core i9 products, AMD's Threadripper 2990WX wins out in many professional applications, especially in terms of value. Currently selling for £1,500, for multi-threaded workloads it's up to 33 per cent faster than the i9-7900X. The problem is that in gaming workloads, it's often slower than even 6-core Ryzen 5 parts (unless you enable Game Mode to disable half the cores).

PC GAMER VERDICT

- + 32 cores at Intel's 18-core price
- + More PCIe lanes
- Gaming performance is mediocre
- Expensive platform and memory

SPECS CORES: 32 / THREADS: 64 / BASE CLOCK: 3.0GHZ / TURBO CLOCK: 4.2GHZ / OVERCLOCKING: YES, 4.0GHZ AT 500W / L3 CACHE: 64MB / TDP: 250W / PCIE 3.0 LANES: 64

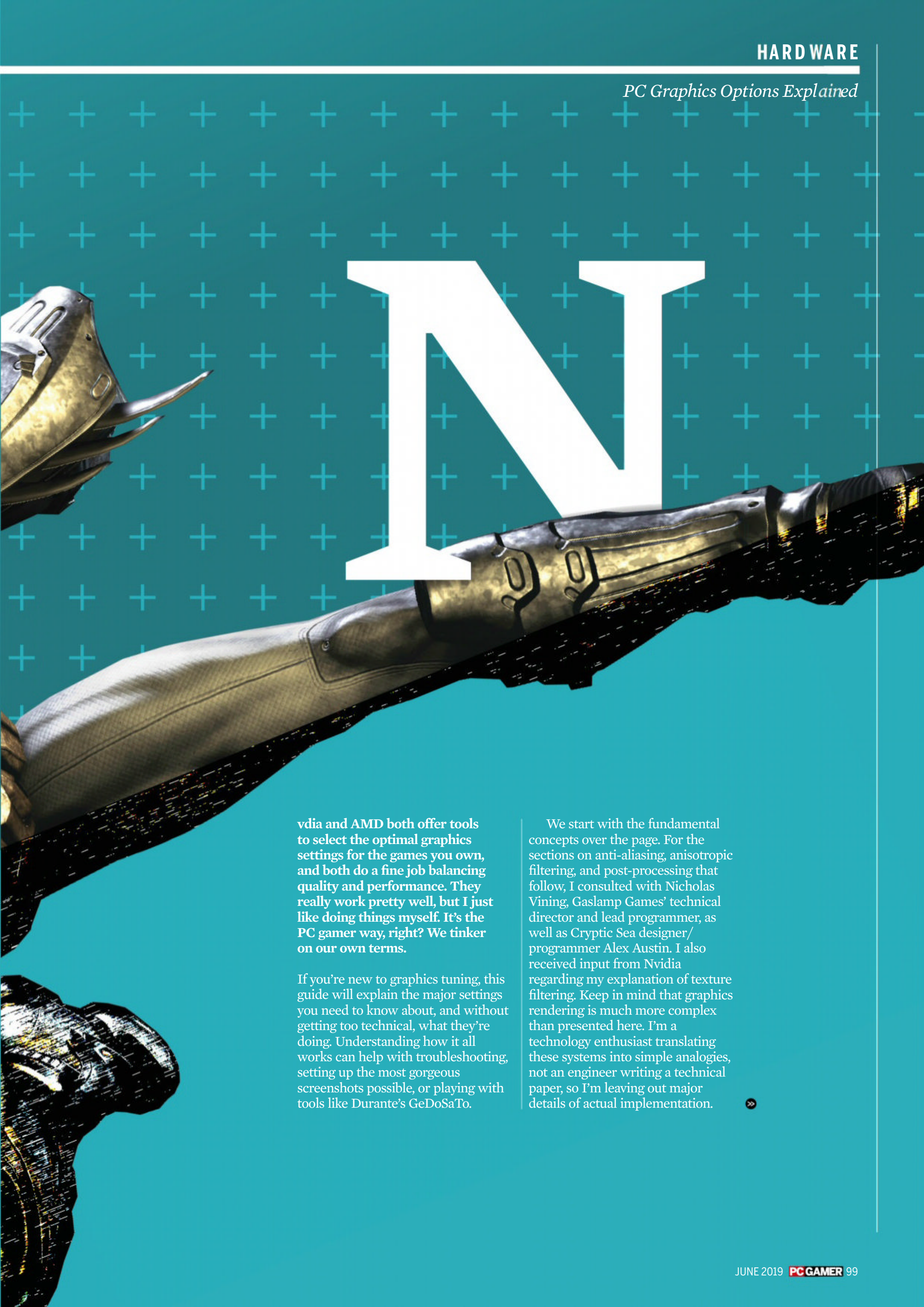
GUIDE

PC GRAPHICS OPTIONS EXPLAINED

Understanding what
graphics options mean,
and which to choose.

By Tyler Wilde





N

vidia and AMD both offer tools to select the optimal graphics settings for the games you own, and both do a fine job balancing quality and performance. They really work pretty well, but I just like doing things myself. It's the PC gamer way, right? We tinker on our own terms.

If you're new to graphics tuning, this guide will explain the major settings you need to know about, and without getting too technical, what they're doing. Understanding how it all works can help with troubleshooting, setting up the most gorgeous screenshots possible, or playing with tools like Durante's GeDoSaTo.

We start with the fundamental concepts over the page. For the sections on anti-aliasing, anisotropic filtering, and post-processing that follow, I consulted with Nicholas Vining, Gaslamp Games' technical director and lead programmer, as well as Cryptic Sea designer/programmer Alex Austin. I also received input from Nvidia regarding my explanation of texture filtering. Keep in mind that graphics rendering is much more complex than presented here. I'm a technology enthusiast translating these systems into simple analogies, not an engineer writing a technical paper, so I'm leaving out major details of actual implementation. »

THE BASICS

Resolution and FPS

A pixel is the most basic unit of a digital image – a tiny dot of colour – and resolution is the number of pixel columns and pixel rows in an image or on your display. The most common display resolutions today are: 1280x720 (720p), 1920x1080 (1080p),

2560x1440 (1440p), and 3840 x 2160 (4K or 'ultra-HD'). Those are 16x9 resolutions – if you have a display with a 16x10 aspect ratio, they'll be slightly different: 1920x1200, 2560x1600, and so on, while newer ultrawide displays can be 2560x1080, 3440x1440, etc.

Frames per second

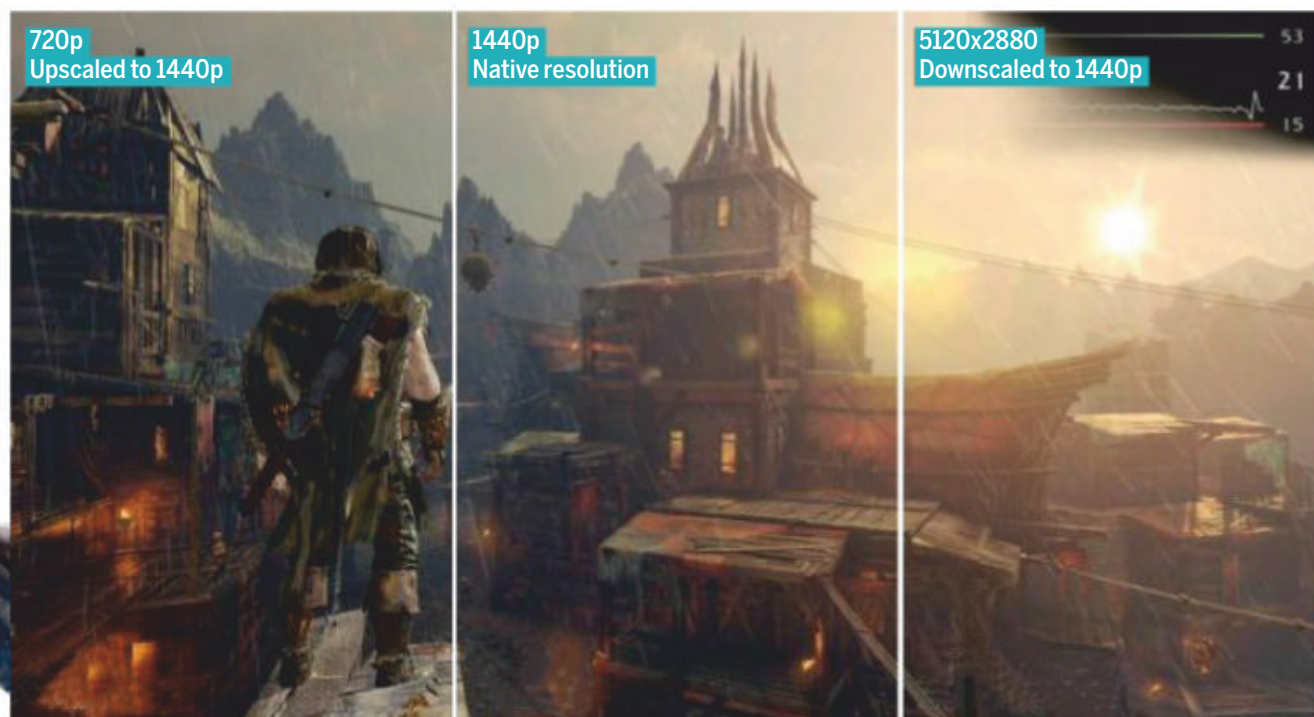
If you think of a game as a series of animation cells – still images representing single moments in time – the FPS is the number of images generated each second. It's not the same as the refresh rate, which is the number of times your display updates per second, and is measured in hertz (Hz). 1 Hz is one cycle per second, so the two measurements are easy to compare: a 60 Hz monitor updates 60 times per second, and a game running at 60 FPS should feed it new frames at the same rate.

The more work you make your graphics card do to render bigger, prettier frames, the lower your FPS will be. If the framerate is too low, frames will be repeated and it will become uncomfortable to view – an ugly, stuttering world. Competitive players seek out high framerates in an effort to reduce input lag, but at the expense of screen tearing (see right), while high-resolution early adopters may be satisfied with lower framerates at 1440p or 4K.

Upscaling and downsampling

Some games offer a 'rendering resolution' setting. This setting lets you keep the display resolution the same (your display's native 1080p or 1440p, for instance) while adjusting the resolution the game is being rendered at (but not the UI). If the rendering resolution is lower than your display resolution, it will be upscaled to fit your display resolution – and, as expected, look like garbage, because the image is being blown up.

If you render the game at a higher resolution than your display resolution, which is an option in *Shadow of Mordor*, the image will be downsampled (or 'downscaled') and will look much better at a high cost to performance.



Vertical sync and screen tearing

When a display's refresh cycle is out of sync with the game's rendering cycle, the screen can refresh during a swap between finished frames. The effect is a 'break' called screen tearing, where we're seeing portions of two or more frames at the same time. It is also our number one enemy after low framerate. One solution to screen tearing is vertical sync (vsync). It's usually an

option in the graphics settings, and it prevents the game from messing with the display until it completes its refresh cycle, so that the frame swap doesn't occur in the middle of the display updating its pixels. Unfortunately, vsync causes its own problems, one being that it contributes to input lag when the game is running at a higher framerate than the display's refresh rate.



Adaptive Vertical Synchronization

The other big problem with vsync happens when the framerate drops below the refresh rate. If the framerate exceeds the refresh rate, vsync locks it to the refresh rate: 60FPS on a 60Hz display. That's fine, but if the framerate drops below the refresh rate, vsync forces it to jump to another synchronized value: 30 FPS, for instance. If the framerate fluctuates above and below the refresh rate often, it causes stuttering. We'd much rather allow the framerate to sit at 59 than punch it down to 30.



G-sync and FreeSync

New technology is starting to solve this big mess. The problems stem from one thing: displays have a fixed refresh rate. But if the display's refresh rate could change with the framerate, we could eliminate screen tearing and eliminate the stuttering and input lag problems of vsync at the same time. Of course, you need a compatible video card and display for this to work, and there are two technologies that do that: Nvidia has branded its technology G-sync, while AMD's efforts are called Project FreeSync. Initially, Nvidia cards only supported G-sync monitors, but GeForce cards will now work with some FreeSync monitors.

PERFORMANCE

Because it determines the number of pixels your GPU needs to render, resolution has the greatest effect on performance. This is why console games which run at 1080p often upscale from a lower rendering resolution – that way, they can handle

fancy graphics effects while maintaining a smooth framerate. I benchmarked the *Shadow of Mordor* resolutions to the left (all settings on maximum) on the Large Pixel Collider with two of its four GTX Titans active, to show how much resolution affects performance.

Shadow of Mordor resolution benchmarks
(2x Nvidia GTX Titan SLI)

	Avg. FPS	Max FPS	Min FPS
1980x720 (1/2 resolution)	102	338	30
2560x1440 (native resolution)	51	189	23
5120x2880 (2x resolution)	16	26	10

ANTI-ALIASING

If you draw a diagonal line with square pixels, their hard edges create a jagged 'staircase' effect. This ugliness (among other artefacts) is called aliasing. If resolutions were much higher, it wouldn't be a problem, but until display technology advances, we have to compensate with anti-aliasing.

There are many techniques for anti-aliasing, but supersampling (SSAA) is useful to explain the process. It works by rendering frames at a higher resolution than the display resolution, then squeezing them back down to size. On the previous page, you can see the anti-aliasing effect of downsampling SoM from 5120x2880 to 1440p.

Consider a pixel on a tile roof. It's orange, and next to it is a pixel representing a cloudy sky, which is light and blueish. Next to each other, they create a hard, jagged transition from roof to sky. But if you render the scene at four times the resolution, that one orange roof pixel becomes four pixels. Some of those pixels are sky-coloured and some are roof-coloured. If we take the average of all four values, we get something in between. Do that to the whole scene and the transitions become softer.

That's the gist, at least, and while it looks very good, supersampling is computationally expensive.



Multisampling (MSAA)

More efficient than supersampling, but still demanding. This is the standard, baseline option in older games

Coverage Sampling (CSAA)

Nvidia's more efficient version of MSAA.

Custom-filter (CFAA)

AMD's more efficient version of MSAA.

Fast Approximate (FXAA)

Rather than analysing the 3D models (ie MSAA, which looks at pixels on the edges of polygons), FXAA is a post-processing filter, meaning it applies to the whole scene after it has been rendered, and it's very efficient. It also catches edges inside textures which MSAA misses. This is the default in many modern games because it has very little overhead.

Morphological (MLAA)

Available with AMD cards, MLAA also skips the rendering stage and processes the frame, seeking out aliasing and smoothing it. As Nicholas Vining explains, "Morphological anti-aliasing looks at the morphology of the jaggies on the edges. For each set of jaggies, it computes a way of removing the aliasing which is pleasing to the eye. It does this by breaking down edges and jaggies into little sets of morphological operators, like *Tetris* blocks, and then uses a special type of blending for each *Tetris* block."

Enhanced Subpixel Morphological (SMAA)

Another post-processing method, described as combining MLAA with MSAA and SSAA strategies. You can apply it with SweetFX, and many modern games natively support this.

Temporal (TAA or TXAA)

TXAA was initially supported on Nvidia's Kepler and later GPUs, but more general forms of temporal anti-aliasing are now available and are typically just labelled TAA. TAA compares the previous frame with the current frame to look for edges and help remove jaggies. This is done through a variety of filters and can help reduce the 'crawling' motion on edges, which looks a bit like marching ants. It cannot, however, remove actual ants from inside your display. You should probably just throw that display out.

Multi-Frame (MFAA)

Introduced with Nvidia's Maxwell GPUs. Whereas MSAA samples in set patterns, MFAA allows for programmable sample patterns.

Deep Learning Super-Sampling (DLSS)

Nvidia's latest, available on certain games using new GeForce RTX cards. According to Nvidia, "DLSS leverages a deep neural network to extract multidimensional features of the rendered scene and intelligently combine details from multiple frames to construct a high-quality final image. DLSS uses fewer input samples than traditional techniques such as TAA, while avoiding the algorithmic difficulties such techniques face with transparency and other elements."

In other words, it's better and more efficient at doing the things Temporal AA does, or at least it's supposed to look better once it has been properly trained for a specific game.



WHAT DO THE NUMBERS MEAN?

Anti-aliasing settings almost always include a series of values: 2x, 4x, 8x, and so on. The numbers refer to the number of colour samples being taken, and in general, the higher the number, the more accurate (and computationally expensive) the anti-aliasing will be.

Then there's the special case of the 'Q'. CSAA attempts to achieve a quality better than or equal to MSAA with fewer colour samples, so 8xCSAA actually only takes four colour samples. The other four are coverage samples. 8QxCSAA, however, bumps the number of colour samples back up to eight for increased accuracy. You'll rarely encounter CSAA these days, so let's call that a fun fact.

Which AA should I use?



It depends on your GPU, your preference, and what kind of performance you're after. If framerate is an issue, however, the choice is usually obvious – FXAA is very efficient. If you've got an RTX card, and the game you're playing supports it, give DLSS a try – you paid for it, and it's top of the line. In older games, you'll probably have to do a bit of testing to get the combination of look and performance you want. If you have the hardware to do it, you can also try supersampling instead of using the built-in options, which usually works. Overriding settings in other ways, however, isn't a sure thing.

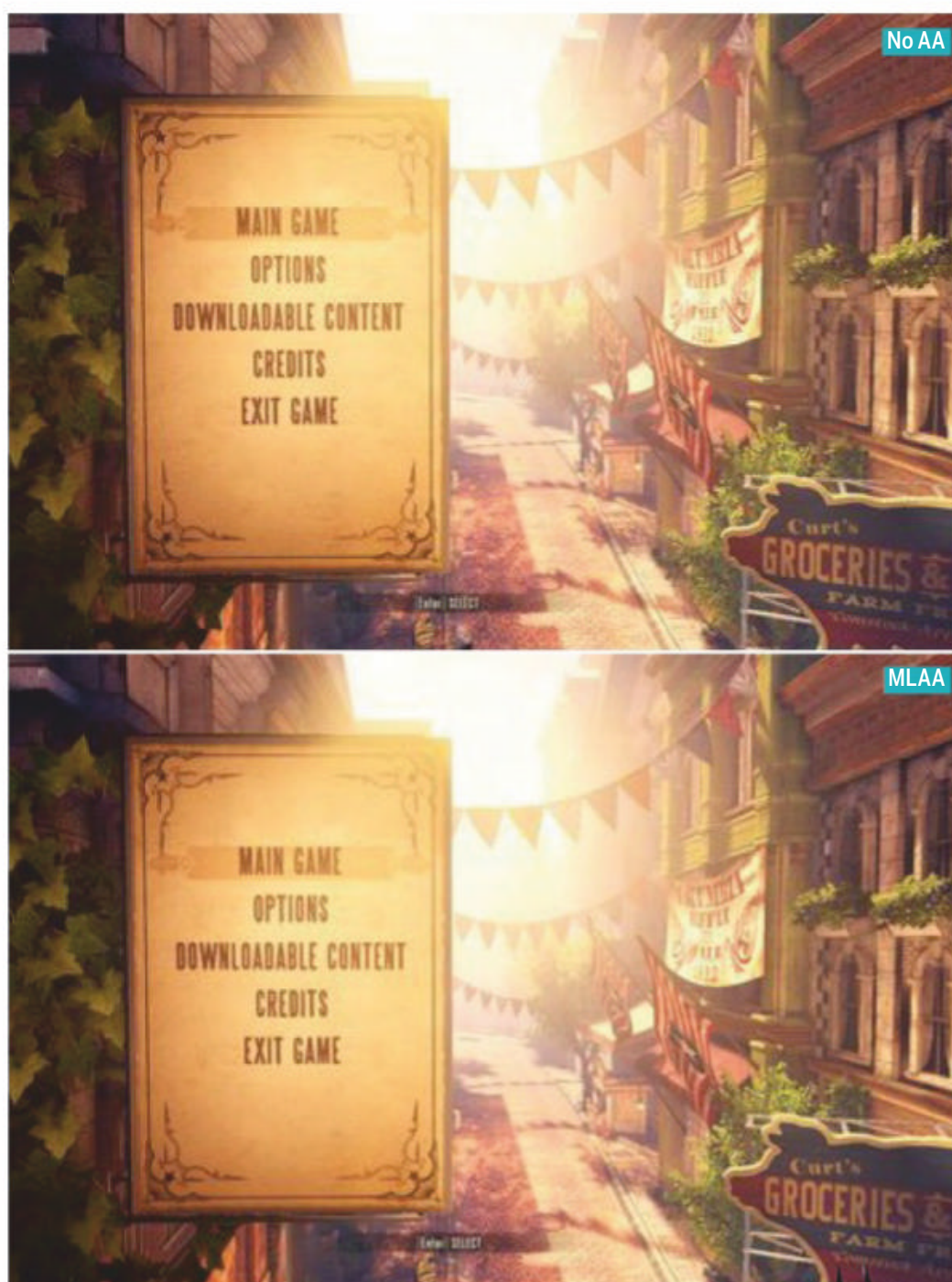
Overriding anti-aliasing settings

Theoretically, in-game graphics options shouldn't matter. You can just open up the Nvidia or AMD control panel and override their settings. Unfortunately, that's not really the case. While you can set overrides for any game, I've had little success getting them to work.

"Very often when overrides don't work it's due to deferred rendering," says Vining, "which just breaks a lot of common anti-aliasing techniques." Alex Austin also notes that some of his techniques don't work with override settings. So, it's just a matter of testing. Turn off all AA in the in-game options, set the override in your control panel, and hop back in: it should be apparent whether or not it took effect.

I've found that AMD's MLAA works the most when enabled in the control panel. It's important to note, however, that it's a post-processing filter and applies to everything in the scene. That means it can take care of hard edges within textures, which can be good, but comes with the side-effect that it may also go after desirable edges, such as in text. Notice how it slightly smooths the text in the *BioShock Infinite* menu, and even goes so far as to smooth my FRAPS FPS overlay.

Supersampling using Nvidia's DSR or AMD's Virtual Super Resolution, however, is more reliable. In the AMD settings, you simply have to turn Virtual Super Resolution on in the Display tab. If you have an Nvidia card, head to the 'Manage 3D settings' section of the Nvidia Control Panel, where you can select DSR factors up to 4x. Do one of those things, and in your games' options you should be able to select resolutions higher than your display resolution. Do so, and the game will run at the selected resolution and be downsampled to your display resolution – very taxing, but it looks nice.



PERFORMANCE

I used *Batman: Arkham City*'s benchmarking tool to test a few older anti-aliasing methods: MSAA, FXAA, and TXAA. The results show, as expected, that FXAA is the least resource intensive, while MSAA and TXAA cause a significant drop in average framerate over no anti-aliasing.

Some more modern games don't give you much of a choice. *Battlefield 5*, for example, offers me two TAA quality options. *Assassin's Creed Odyssey* offers low, medium, high, and adaptive options.

Batman: Arkham City AA benchmarks (2x Nvidia GTX Titan SLI)

	Avg. FPS	Max FPS	Min FPS
No AA	161	224	57
MSAA 8x	84	166	44
FXAA (high)	154	204	60
TXAA (high)	98	118	67



TEXTURE FILTERING

Bilinear and trilinear filtering

Texture filtering deals with how a texture – a 2D image (and other data) – is displayed on a 3D model. A pixel on a 3D model won't necessarily correspond directly to one pixel on its texture (called a 'texel' for clarity), because you can view the model at any distance and angle. So, when we want to know the color of a pixel, we find the point on the texture it corresponds to, take a few samples from nearby texels, and average them. The simplest method of texture filtering is bilinear filtering, and that's all it does: when a pixel falls between texels, it samples the four nearest texels to find its colour.

Introduce mipmapping, and you have a new problem. Say the ground you're standing on is made of cracked concrete. If you look straight down, you're seeing a big, detailed concrete

texture. But when you look way off into the distance, where this road recedes toward the horizon, it wouldn't make sense to sample from a high-resolution texture when we're only seeing a few pixels of road. To improve performance (and prevent aliasing, Austin notes) without losing much or any

quality, the game uses a lower-resolution texture – called a mipmap – for distant objects.

When looking down this concrete road, we don't want to see where one mipmap ends and another begins, because there would be a clear jump in

quality. Bilinear filtering doesn't interpolate between mipmaps, so the jump is visible. This is solved with trilinear filtering, which smooths the transition between mipmaps by taking samples from both.

**WE DON'T WANT TO SEE
WHERE ONE MIPMAP ENDS
AND ANOTHER BEGINS**





Anisotropic filtering

Trilinear filtering helps, but the ground still looks all blurry. This is why we use anisotropic filtering, which improves texture quality at oblique angles.

To understand why, visualise a square window – a pixel of a 3D model – with a brick wall directly behind it as our texture.

Light is shining through the window, creating a square shape on the wall. That's our sample area for this pixel, and it's equal in all directions. With bilinear

and trilinear filtering, this is how textures are always sampled. If the model is also directly in front of us, perpendicular to our view, that's fine, but what if it's tilted away from us?

If we're still sampling a square, we're doing it wrong, and everything looks blurry. Imagine now that the brick wall texture has tilted away from the window. The beam of light transforms into a long, skinny trapezoid covering much more vertical space on the

texture than horizontal. That's the area we should be sampling for this pixel, and in the form of a rough analogy, this is what anisotropic filtering takes into account. It scales the mipmaps in one direction (like how we tilted our wall) according to the angle we're viewing the 3D object.

This is quite a difficult concept to grasp, and I have to admit that my analogy does little to explain the actual implementation of it.



PERFORMANCE

Anisotropic filtering it's not nearly as much of a hit as anti-aliasing, which is why it rarely appears in menus these days – it's just on, no matter what. Using the *BioShock Infinite* benchmarking tool, I only saw average FPS drop by six between bilinear filtering and 16x anisotropic filtering. That's not much of a difference considering the huge quality increase. High texture quality is pointless with poor filtering.

WHAT DO THE NUMBERS MEAN?

Anisotropic filtering isn't common in modern settings menus anymore, but where it does appear, it generally comes in 2x, 4x, 8x, and 16x flavours. Nvidia describes these sample rates as referring to the steepness of the angle the filtering will be applied to, "AF can function with anisotropy levels between 1 (no scaling) and 16, defining the maximum degree which a mipmap can be scaled by, but AF is offered to the user in powers of two: 2x, 4x, 8x, and 16x. The difference between these settings is the maximum angle that AF will filter the texture by. For example: 4x will filter textures at angles twice as steep as 2x, but will still apply standard 2x filtering to textures within the 2x range to optimise performance. There are diminishing returns with the use of higher AF settings because the angles at which they are applied become rarer."

QUALITY SETTINGS & POST-PROCESSING

Quality settings

What quality settings actually do will vary between games. In general, they raise and lower the complexity of game assets and effects, but going from 'low' to 'high' can change a bunch of variables. Increasing the shadow quality,

for instance, might increase the shadow resolution, enable soft shadows as well as hard shadows, increase the distance at which shadows are visible, and so on. It can have a significant effect on performance.

Texture quality, which lowers and raises the resolution of textures, tends to affect performance and visual quality a lot. I benchmarked *BioShock Infinite* with all settings set to high, changing only the texture quality, to get a sense of how expensive it is. That's an average FPS jump of 11 between 'very low' and 'ultra.' Not too bad, but the amount

***BioShock Infinite* texture quality benchmarks**
(2x Nvidia GTX Titan SLI)

	Avg. FPS	Max FPS	Min FPS
Very low	103	295	30
Normal	101	180	20
Ultra	92	178	15

of slow-down will vary system-to-system. There's no quick method for determining the best quality settings for your system – it's a case where they just need to be tested, and I recommend starting with Nvidia or AMD's suggestions, then raising the quality on textures, lighting, and shadows and finally checking out your framerate.



Ambient occlusion

Ambient lighting exposes every object in a scene to a uniform light – think of a sunny day, where even in the shadows, a certain amount of light is scattered about. It's paired with directional light to create depth, but on its own it looks flat.

Ambient occlusion attempts to improve the effect by determining which parts of the scene shouldn't be exposed to as much ambient lighting as others. It doesn't cast hard shadows like a directional light source, rather, it darkens interiors and crevices, adding soft shading.

Screen space ambient occlusion (SSAO) is an approximation of ambient occlusion used in real-time rendering, and has become commonplace in games in the past few years – it was first used in *Crysis*. Sometimes, it looks really dumb, like everything has a dark 'anti-glow' around it. Other times, it's effective in adding depth to a scene. All major engines support it, and its success will vary depending on the game and implementation.

Improvements on SSAO include HBAO+ and HDAO.

High dynamic range rendering (HDRR)

High dynamic range was all the rage in photography a few years ago. The range it refers to is the range of luminosity in an image – that is, how dark and bright it can be. The goal is for the darkest areas to be as detailed as the brightest areas. A low-dynamic-range image may show lots of detail in the light part of a room, but lose it all in the shadows, or vice versa.

In the past, the range of dark to light in games was limited to 8 bits (only 256 values), but as of DirectX 10 128-bit HDRR is possible. HDR is still limited by the contrast ratio of displays, though. There's no standard method for measuring this, but LED displays generally advertise a contrast ratio of 1000:1.



Depth of field (DOF)

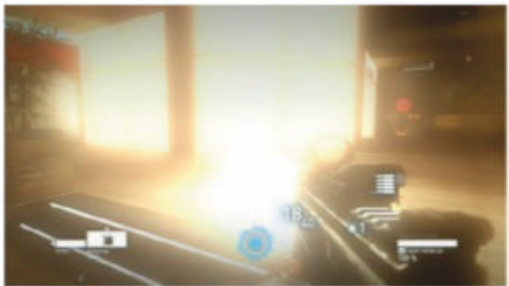
In photography, depth of field refers to the distance between the closest and furthest points which appear in focus. If I'm taking a portrait with a small DOF, for instance, my subject's face might be sharp while the back of her hair begins to blur, and everything behind her is very blurred. In a high DOF photo, on the other hand, her nose might be as sharp as the buildings behind her.

In games, DOF generally just refers to the effect of blurring things in the background. Like motion blur, it pretends our 'eyes' in the game are cameras, and creates a film-like quality. It can also affect performance significantly depending on how it's implemented. On the LPC, the difference was negligible, but on the more modest PC at my desk (Core i7 @ 3.47 GHz, 12GB RAM, Radeon HD 5970) my average framerate in BioShock Infinite dropped by 21 when going from regular depth of field to Infinite's DX11 'Diffusion Depth of Field.'



Motion blur

Motion blur is pretty self-explanatory: it's a post-processing filter which simulates the film effect caused when motion occurs while a frame is being captured. Many gamers I've seen in forums or spoken to prefer to turn it off. Not only because it affects performance, but because it just isn't desirable. I've seen motion blur used effectively in some racing games, but I'm also in the camp that usually turns it off. It doesn't add enough for me to bother with any performance decrease.



Bloom

The famously overused bloom effect attempts to simulate the way bright light can appear to spill over edges, a visual cue that makes light sources seem brighter than they are (your display can only get so bright). It can work, but too often it's applied with a thick brush, making distant oil lamps look like nuclear detonations. Most games offer the option to turn it off. The screenshot above is from Syndicate, which probably includes the most hilarious overuse of the effect.

CONCLUSION

How these settings affect visual quality will vary from game to game, and how they affect performance will vary from system to system. These benchmarks are anecdotal, but they can give us an idea of which processes are generally more taxing than others.

Whenever a graphics intensive game releases, especially if it's on a new engine or uses new tech, you can bet we're working on a performance and settings guide for PCGamer.com.

YOUR NEXT PC

BUYER'S GUIDE

Build the best PC for your budget



KEY

Budget build

PC gaming is for everyone. Pick the parts you want to build a new, well-rounded PC for a good price.

Mid-range build

You want to run every new game at 1080p 60fps. This recommended build will see you through.

Advanced build

You're looking for the best PC on the market and superior components. But you still want to spend smart.

BUDGET BUILD

Enjoy 1080p gaming without breaking the bank



TOTAL
£1,035

MOTHERBOARD

**B360M-DS3H**Gigabyte **£65**

It lacks overclocking options, but the new B360 chipset is far cheaper than the Z370 and is perfect for this budget build.

PROCESSOR

**Core i3-8100**Intel **£114**

A great processor for out-of-the-box gaming performance. Opt for the AMD Ryzen 1300X if you'd like to overclock.

GRAPHICS CARD

**GeForce RTX 2060 Twin Fan**Zotac **£329**

The 2060 is marginally pricier but noticeably better than our old 1060, making it the go-to budget GPU of the moment.

COOLER

**Hyper 212 Evo**CoolerMaster **£28**

Even a budget build can benefit from a good CPU cooler, letting you enjoy a quieter, cooler system.

MEMORY

**Vengeance LPX 8GB (2x4GB) @2400MHz**Corsair **£42**

DDR4 prices are still high, however this Corsair pair is a good value option.

POWER SUPPLY

**CX-M Series CX550M**Corsair **£56**

A UK price spike in our previous EVGA 500W pick opens the door for this quiet Corsair option.

SSD

**MX500 250GB**Crucial **£40**

Crucial's SSD range is fantastic value and offers good performance, too. A 250GB drive can hold your OS and essential programs.

HDD

**WD Blue 1TB 7200RPM**Western Digital **£38**

One terabyte of old-fashioned hard storage is the perfect home for all of your media, backups and storage-hungry games.

CASE

**Neos**Bitfenix **£34**

The Neos provides decent airflow, good support for 3.5-inch hard drives, and a fairly painless build experience.

DISPLAY

**G2460PF**AOC **£200**

This is the cheapest 144Hz gaming monitor you can buy, yet it still offers decent image quality, great performance and Freesync.

KEYBOARD

**K55**Corsair **£37**

This keyboard may lack mechanical keyswitches but it offers decent typing, plus it has RGB and extra gaming keys.

MOUSE

**Rival 110**SteelSeries **£25**

A great sensor, simple design and impressively low price make this a great entry-level gaming mouse.

HEADSET

**Cloud Stinger**HyperX **£27**

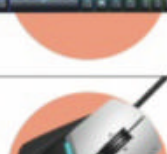
We love the HyperX Cloud, but at £70 it's too much for an entry-level system. The Cloud Stinger is the next best thing.

MID-RANGE BUILD

Our recommended build for playing the latest games



TOTAL
£1,597

MOTHERBOARD		Prime Z370 A II Asus £156 Great shielding, full of features, and featuring that – ahem – all important RGB lighting, this is a fine Asus board.
PROCESSOR		Core i5-8600K Intel £248 Six cores, six threads, good out-of-the-box clock speeds – and it's overclockable. No performance bottlenecks with this installed.
GRAPHICS CARD		GeForce RTX 2060 Twin Fan Zotac £329 Serious power from the 'just about affordable' end of Nvidia's new GPU fleet, and it's ray tracing-ready too.
COOLER		Hydro Series H55 Quiet Edition Corsair £55 Tidy and quiet, the H55 will unlock our CPU's overclocking potential and look good through your case window while it does so.
MEMORY		Vengeance LPX 16GB (2x8GB) @2666 Corsair £89 16GB is the minimum amount of RAM we'd recommend for a system of this calibre.
POWER SUPPLY		CX 650W Corsair £70 It may not feature fancy modular design, but Corsair's reliable CX 650 is cheap enough to accommodate for our other part picks.
SSD		MX500 250GB Crucial £40 This is still our SSD of choice. We've kept the capacity the same as our cheaper build, but upgrading to 500GB would be ideal.
HDD		WD Blue 1TB 7200RPM Western Digital £38 SSDs are great, but they're still far from cheap. This 1TB HDD will hold as many games as you will need.
CASE		Eclipse P400S TG Phanteks £82 The clean lines, intuitive build features and fantastic price cements the Eclipse as our mid-range case of choice.
DISPLAY		Optix MAG271CR MSI £290 Curved, stylish, and offering 144Hz refresh rates, our MSI monitor pick suits pros and would-be pros alike.
KEYBOARD		MasterKeys Pro L CoolerMaster £76 This is one of the cheapest mechanical keyboards, yet it looks and feels great. It only has single-colour backlighting, though.
MOUSE		AW958 Elite Alienware £52 Suitable for any grip thanks to its add-ons, and there's just something about those massive metallic buttons.
HEADSET		HyperX Cloud Kingston £72 Despite the budget price, we recommend this headset. There's simply nothing better for the money.

ADVANCED BUILD

Go above and beyond with a PC powerful enough to end worlds



TOTAL
£3,557

MOTHERBOARD		Strix X470-F Gaming Asus £185 Get the most from the new AMD Ryzen 2700X with this matching X470 motherboard that's packed with features.
PROCESSOR		Ryzen 7 2700X AMD £292 Easy to overclock and with huge performance out of the box, AMD's new flagship CPU is the one to go for.
GRAPHICS CARD		GeForce RTX 2080Ti Black Edition EVGA £1,070 EVGA's custom design is considerably cheaper than Nvidia's reference card, and with great cooling.
COOLER		Kraken X62 NZXT £140 The Kraken is the culmination of three of our favourite things: an infinity mirror, a 280mm radiator and slick braided cooling.
MEMORY		Vengeance LED RGB 32GB @3200 Corsair £275 Ryzen is the one processor that does benefit hugely from higher-frequency memory. This kit is perfect for any would-be video expert.
POWER SUPPLY		HX750i 80 Plus Platinum Corsair £147 Modular, custom cable kits, and a platinum efficiency rating. What's not to love about this Corsair PSU? Nothing, that's what.
SSD		970 Evo 500GB M.2 PCIe SSD Samsung £120 Samsung's newest NVMe SSDs push performance to new heights and cost the same as the previous 960 range.
HDD		WD Blue 4TB Western Digital £92 With a large boot SSD, there's little need for a large, cheap SSD. Instead we've opted for a huge 4TB hard drive for all your bulk data.
CASE		Enthoo Evolv ATX TG Phanteks £135 The 5mm thick aluminium panels resonate with svelte professionalism, and the interior makes building inside this a dream.
DISPLAY		XB271HU Acer £617 Our previous choice, the AOC AG271QG, has shot up in price. This Acer is now the best value 165Hz IPS gaming display.
KEYBOARD		K70 LUX RGB Corsair £115 Even when money is no object it's hard to argue against Corsair's latest K70. A no-fuss, solid piece of aluminium craftsmanship.
MOUSE		Mamba Elite Razer £90 A beautiful design, comfortable shape and outstanding performance make this a brilliant high-end gaming mouse.
HEADSET		ATH-AG1X Audio-technica £279 What's life without a nice set of cans? The ATH-AG1X set is the pinnacle of headphones, and it's super comfy to boot.

EXTRA+LIFE

CONTINUED ADVENTURES IN GAMING

There is a perfectly good bus service, but they'd rather sit in traffic jams and whine.



“Amenities cost money – and raising taxes doesn’t go down too well”

Shaking hands, kissing babies and abandoning office in **SIMCITY**

God, I’m sick of real-life politics. Right now it all feels so high-stakes and important that I can’t bring myself to look away from rolling news coverage, but I can’t be the only one who sees the headlines and thinks they could do a much improved job. I have neither education nor work experience, but I do have a genuine conviction that I could make a better fist of things than current world leaders. Firing up *SimCity*, I put my money where my mouth is.

Optimistically, I name my nascent tangle of streets SNAFUville. This, it transpires, is an act of foresight. As soon as citizens have moved here they start complaining. Case in point

EMMA DAVIES



THIS MONTH
Decided not to run for re-election

ALSO PLAYED
The Sims 4

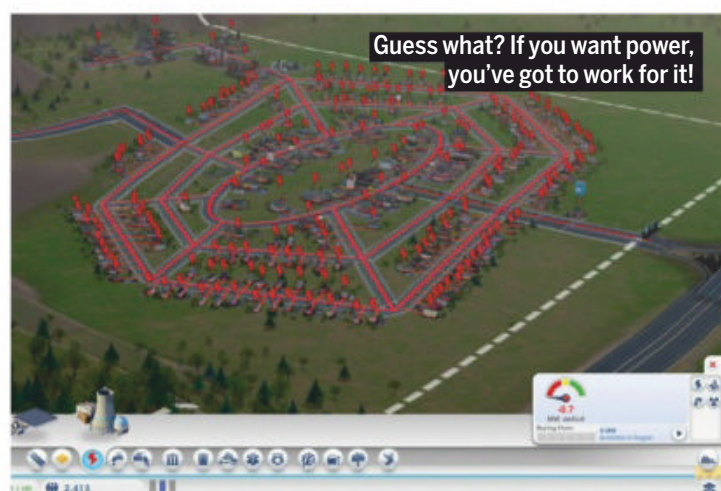
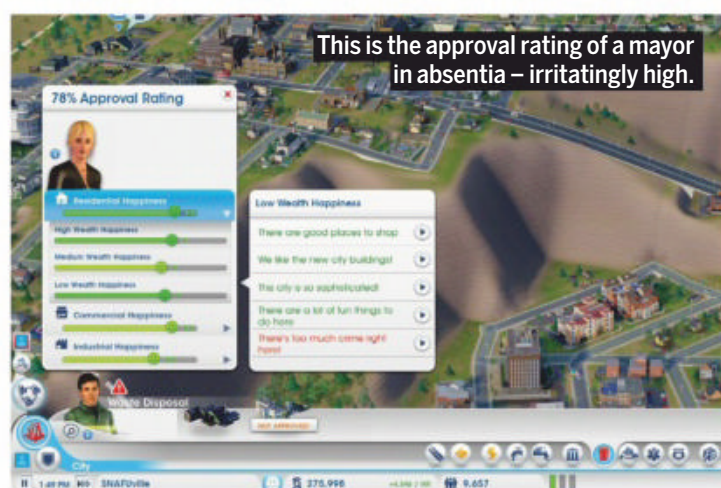
– electricity. They’re all whining about how they can’t plug in the toaster or switch on the TV, but are any of them accepting the jobs on offer at the new power plant that I’ve built for them? Not for ages. I’d say that delay’s on them, not me.

The thing that quickly strikes me is how powerless I feel, despite my status as the sole, despotic member of government in this godforsaken town. I want to improve things, but I

just can’t do it overnight. I’m trying, trust me. I really am. The thing is, amenities cost money – and raising taxes doesn’t go down too well. This means that my townsfolk can’t have everything at once, even though they darn well want it. Now.

It’s not that I’m blind to the fact that crime is happening, guys. I accept it’s not palatable to the settlement’s growing demographic of mid-wealth NIMBYs. Except, police stations cost money that we don’t currently have. And while I’m trying

EXCEPT, POLICE STATIONS COST MONEY THAT WE DON’T CURRENTLY HAVE



to cobble together the simoleans, we also end up needing an urgent extension to the hospital.

OUT OF OFFICE

Even once I've established an equilibrium where almost nothing in SNAFUville is on actual fire, people still won't stop nagging me. There's never enough suitable housing for the middle classes, my zoning manager gruffly informs me. The power plant manager keeps yelling at me about brown-outs, although my wind farm is clearly generating a surfeit of electricity. Commuters fume over traffic problems, and apparently those are all my fault, too.

After enduring a spell of this ceaseless mithering, I walk away. Quite literally, I stand up and step away from the PC. I go off for a shower and to stack some dirty dishes, leaving the game running at full speed. If they've all got such good ideas about how to run SNAFUville, they clearly don't need me, do they? Let them do it themselves if they're such experts. I come back 20 minutes later to find the town experiencing major issues with power, zoning and schools. As I am nothing if not petty, this provides more than a twinge of vindictive schadenfreude. Until I notice that my mayoral approval rating now stands at 78 percent... eight percent up on the number before my impromptu sabbatical. They literally like me better when I'm not even there. Sigh. ■



“I microwave a tube of what may be meat”

Waiting out the night in **IT'S WINTER**

PHIL SAVAGE



THIS MONTH
Took out the trash

ALSO PLAYED
Sea of Thieves, Baba is You

What am I doing here? It's cold. It's lonely. It's boring. Ambient noise offers the suggestion of life, but it may as well be an illusion. There is nothing here. I accidentally knock a spare light bulb off a nearby bookshelf. Rather than smash itself against the floor – a sharp, violent exclamation mark punctuating the endless ellipsis of this space – it just falls apart, silent and timid.

It's Winter is a short, experimental game about the solitary malaise of living in a post-Soviet apartment block. The TV has no reception. The radio is broken. There is no goal, just objects and isolation, architecture and snow, and quiet, familiar dread.

At least I have something to do now. I pick up a shard of broken glass and carry it over to the bin in the kitchen. I go back and retrieve the next shard. And the next. It passes the time.

Finished, I pick up the bin and leave the apartment. Down the stairs, I find the garbage disposal chute. I'm

not really sure how to tip the bin over, so I fling it against the wall, emptying the contents over the floor. Then I pick up the individual bits of rubbish and place them in the hopper. It passes the time.

I needn't have bothered. The stairs of the apartment are littered with debris, from smashed plates to multiple ashtrays worth of cigarette butts. I return the now empty bin to its home under the kitchen sink. Outside, a tractor passes by. It drives up and down the road, its orange warning light periodically puncturing the darkness. I head outside to watch it. It doesn't acknowledge my presence. It's another suggestion of life. An illusion.

BACHELOR SAD

Back inside I fry an egg. I microwave a suspicious tube of what might be meat. I attempt to cut what I think is a block of cheddar, but give up after I realise the knife doesn't work.

I feel alone and empty, which is quite an achievement because I'm playing *It's Winter* in the middle of Future's editorial office.

It's pretty loud in here. GamesRadar is having strong opinions about *Sekiro*. Official Playstation Magazine is playing some anime game. But the ambient noise feels like it's just the suggestion of life. It may as well be an illusion.

Me? I've knocked over another light bulb, deliberately this time. It passes the time. ■



DJ Professor K tells you what graffiti is really about

Use the city as your canvas
and paint us some vibes from the street!



The stages capture the spirit of Tokyo.



“The music is really the only thing maintaining the illusion that I’m cool”

Busting out some moves to stick it to the man in **JET SET RADIO**

There are games that turn the people around me all gooey with warm nostalgia. *Jet Set Radio* is one of them. Playing it, I immediately see why. It has so much style – like *Katamari Damacy* from the same era – and feels effortlessly silly in the way that most modern games by big publishers simply aren’t allowed to be.

Where I grew up, we didn’t have youth culture or counterculture or really much of any culture. On Friday evenings we had pints at Petra’s Pancake House. When it got warmer outside we took six-packs of lager down to the pastures by the river. In those days I imagined the cool teens looked like the way they do in *Jet Set Radio*. If you’ve ever been to Tokyo (or just looked at a Tokyo street fashion blog), you’ll encounter the real-life version of what I would have otherwise assumed were just quirky videogame characters.

The layout of the stages, too, is reminiscent of the actual layout of popular spots in the different wards of Tokyo. *Jet Set Radio* looks good, it sounds even better, and with the power of games I’m ready to excel at

MALINDY HETFELD



THIS MONTH
Found that some people are too sick for sick grinds.

ALSO PLAYED
Sekiro: Shadows Die Twice,
Slay the Spire

two things I’m usually terrible at: skating and visual arts. Here goes a sick grind! Well... I may have missed the fence because of all my excess momentum. But as soon as I’ve walked up these stairs! Oh... now I’ve hit the wall I was trying to tag.

RADIO GA GA

It turns out that my character’s demeanour and the general silliness of the game had me thinking this would be easy – that I’d be effortlessly skating across the rooftops of Tokyo-To while the police force shakes their fists at me in a rage. *Jet Set Radio*, however, is very fiddly and dense. Once I’ve

WE TOOK SIX-PACKS OF LAGER DOWN TO THE PASTURES BY THE RIVER

manoeuvred onto a roof with an admittedly cool trick, I immediately fall off the other side. Whenever I ram into a group of police lemmings, I end up pitifully tumbling and crawling on my hands and knees. At this point, the music is really the only thing maintaining the illusion that I’m cool and do crime well, even as my character repeatedly yells “yeah!” as I jump behind a large bus in order to avoid the inspector aiming his revolver at me. The challenges between stages, in which I try to emulate the tricks of other characters, routinely end with me embarrassing myself.

So I’m not as swift and smooth as I thought I would be, but I love Sega for wondering, out loud and in code, about what it would be like to take on the more serious, skill-focused skateboarding games and instead ask you to shake cartoon dogs off your butt. I’m into the idea that once you’ve mastered the actual skating, no wall in the big city is too high to be tagged. Of course we do unrealistic things in games all the time, but we’re often meant to take them seriously or treat them with a certain amount of gravitas. Here I may mess up the landing, but I’m still cooler than anyone else I know. ■

“You can switch your brain off and just lose yourself in it”

Putting my nose to the grindstone in **FINAL FANTASY XII**

The first time I became aware of the concept of grinding in RPGs was when I played *Final Fantasy VII*. I'd reached the Temple of the Ancients and encountered a boss called Demon's Gate who totally wiped me out. Realising I was underpowered, I spent several hours running back and forth along the same corridor fighting insect things until I was tough enough to beat it. This was my punishment for skipping so many random battles earlier in the game.

Here's the thing, though – I quite enjoy grinding. You can switch your brain off and just lose yourself in it, listening to music or a podcast to fight off the boredom. There's something hypnotic about repeating a fairly simple, undemanding task and receiving a reward for it.

Years later, I'm playing *Final Fantasy XII* and I'm delighted to discover a prime spot for grinding. In the Lhusu Mines on Bhujerba, there's a bridge called the Shunia Twinspan. This is known among fans as the Skeleton Bridge because, as you walk back and forth across it, dozens of

ANDY KELLY



THIS MONTH
Lost count of how many skeletons he killed

ALSO PLAYED
Generation Zero

undead skeletons spawn. And they keep respawning, for ages, before you have to run off the screen and back again to restart the process. Which is, of course, ideal for levelling up.

And so I lined up a few podcasts, plugged my PC into my TV, sunk into the couch and enjoyed some quality grinding. I lost count of how many times I ran along that bridge and back. I must have killed thousands of skeletons, and after a couple of hours my party was obscenely powerful – at least for this stage of the game.

It also made me rich. The skeletons drop bones, which you can sell to a vendor outside the Lhusu

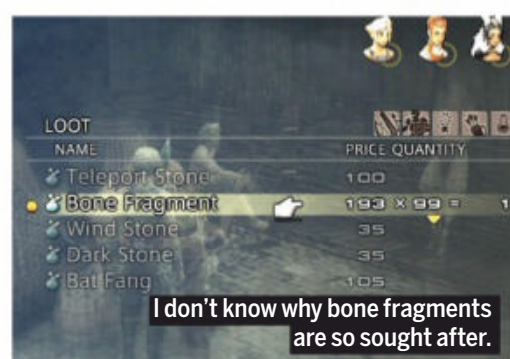
AFTER A COUPLE OF HOURS MY PARTY WAS OBSCENELY POWERFUL

Mines for an outrageous amount of gil. By the time I was finished, Vaan had about 200 grand in his bank account, or wherever it is he keeps his money. Some might argue I'm ruining the experience for myself by doing this, but I think it's a perfectly valid way to play the game. It helps that you can hit the fast forward button and speed the game up at any time, making the whole process less time-consuming. But watching my party skitter around the screen so rapidly did make me feel slightly queasy at times.

MEDITATING

I don't fully understand why I find grinding so relaxing, and why all that time I spent slaying skeletons on the Shunia Twinspan was so satisfying. It appeals to me in the same way games such as *Euro Truck Simulator 2* do – enough interaction not to be completely passive, but passive enough to let my mind slip into an almost subconscious rhythm.

For a lot of people, grinding will always be a reason to dislike a game or a sign that a game is badly paced or designed. But for me, in some bizarre way, it's a chance to unwind. Long live the grind. ■





BATTLEFIELD V

Battlefield's take on battle royale finally drops in. *By Andy Kelly*

Well, of course. *Battlefield*, one of the biggest shooters in the world, was never going to let the battle royale craze pass it by. Especially with rival *Call of Duty* having a mode of its own. Firestorm is, as you might expect, a mode in which a large number of players drop into an even larger map and fight until one person is left standing. If you survive till the end, you're the winner. If not, well, just try again.

The titular firestorm is the ever-shrinking play space that has become a battle royale staple. It squeezes players together as the match progresses and prevents you from spending the entire thing hiding in a shed and waiting for it all to blow over. Not that I've ever tried that. And I must say, the effect is pretty dramatic to look at – a giant ring of fire circling the map, burning on the horizon, belching smoke into the crisp mountain air.

As the firestorm crawls across the map, buildings and foliage caught in its wake burst into flames – the sound of which you can use to mask your footsteps if you're brave (or foolish) enough to stick to the very edge of the inferno. And, naturally, if you get caught in the flames yourself you'll take damage, eventually dying if you don't haul ass. Seeing that

NEED TO KNOW

RELEASE
November 9, 2018

DEVELOPER
EA DICE

PUBLISHER
EA

LINK
www.battlefieldv.com

burning wall bearing ominously down on you is pretty terrifying.

The action takes place in Halvøy, which is ten times larger than Hamada – currently the biggest map in the *Battlefield* series to date. Set in Norway, the island is dominated by enormous snowy mountains and includes a variety of terrain including forests, fields, villages, and landmarks such as a dam and a frozen lake.

When you parachute in at the beginning of a match, deciding where to land is your first real decision.

It may be tempting to aim for a big town, knowing the houses will be stuffed with guns, but this will increase your chances of being immediately murdered by another player. This is, of course, standard battle royale stuff, and anyone familiar with the genre will immediately know what they're doing. This is great for anyone seeking a sense of familiarity, but it leaves me wondering what makes Firestorm unique.

The fact that it's *Battlefield* on a larger scale is its strongest selling point, perhaps. There are land, sea, and air vehicles. You can capture

control points – albeit to unlock better weapons rather than claim territory. And you can fight and communicate with a close-knit squad. Moving, shooting, and climbing has that distinctive *Battlefield* series feel, and shared tech and assets mean it's consistent with the rest of *Battlefield V*.

It's fun too, with all the knife-edge tension and sudden bursts of thrilling, breakneck action that has made battle royale the dominant genre on PC. It all just feels a bit... flat? The grounded historical setting and drably authentic soldiers are ultimately pretty uninspiring – especially compared to the zingy heroes from *Apex Legends*, *Fortnite*'s chaotic slapstick, or even the *Call of Duty* character cameos in *Black Ops 4*'s Blackout mode.

Some players will undoubtedly appreciate the minimalism: the focus on straight combat over wild abilities,



LACKS A REALLY SOLID HOOK TO MAKE IT STAND OUT

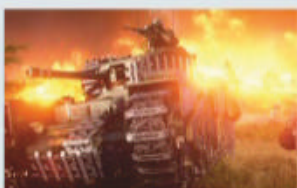
elaborate character movement, and a constantly shifting meta. But for me Firestorm lacks a really solid hook to make it stand out from the crowd.

BREAK STUFF

Firestorm also makes use of *Battlefield*'s trademark destruction, and there's something immensely satisfying about chasing someone out of a hiding place by levelling the house they're cowering in with artillery. You can also call in reinforcements such as the V-1 rocket, which is every bit as devastating as it is in the main game. But these elements don't quite manage to make Firestorm essential.

This is a solid, well-made battle royale mode that, while sorely lacking any really interesting ideas or gimmicks, is a decent addition to the game overall. My problem is that it feels like something that was developed to ride the wave of a trend, rather than something anyone wanted to make. As far as obligations to shareholders go, it's pretty decent. But when I can play something as fun as the fantastic *Apex Legends*, Firestorm just can't compete. ■

GET AROUND *A vehicle for every occasion*



LAND CHURCHILL CROCODILE

The flame-spewing tank from the main game is here. Use it to flush enemies out of their hiding places.



SEA SCHWIMMWAGEN

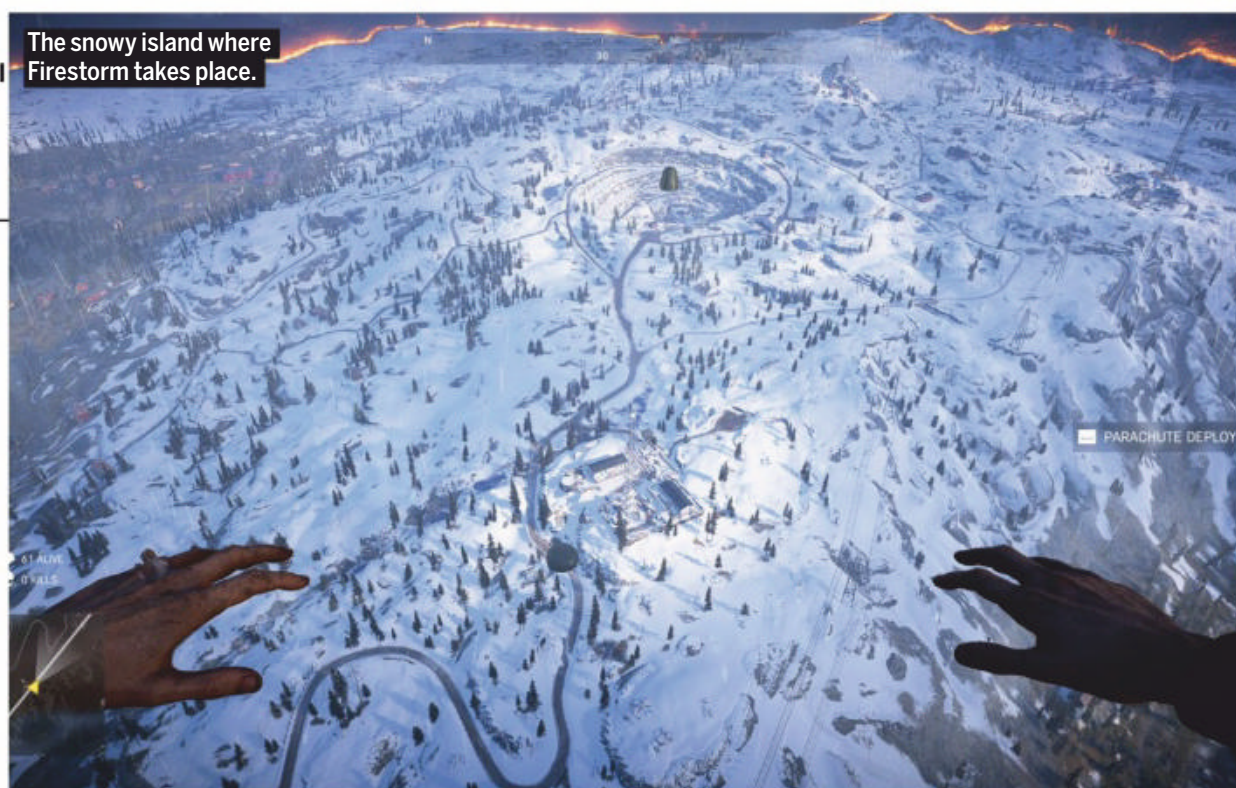
You can pile your whole squad into this amphibious vehicle, which can drive from land straight into the water and back out again.



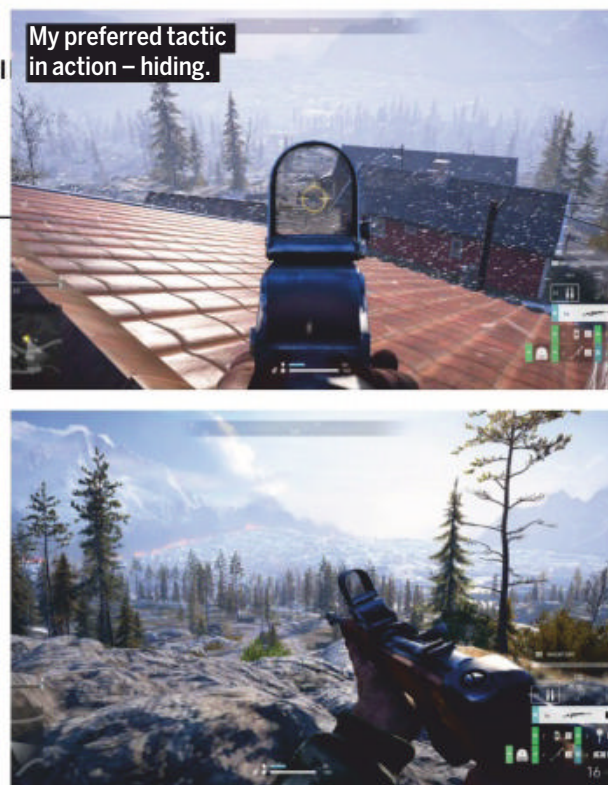
AIR PROTOTYPE HELICOPTER

These are great for navigating the map, but they have weak armour so you'll be shot down.

The snowy island where Firestorm takes place.



My preferred tactic in action – hiding.



The firestorm itself is an intimidating sight.



Vehicles just make you a big, loud target.



Hiding again, this time inside a house.





DISHONORED 2: THE JUDGE OF KARNACA

PART IV

The Judge returns to
Dunwall, and makes his
final ruling.

By Rick Lane

THE RULES

1 Judge the actions of every NPC in *Dishonored II* using clues from the environment and game mechanics.

2 Only kill NPCs with clear evidence of wrongdoing. "Innocent" lives must be spared.

3 High Chaos must be avoided AT ALL COSTS.

We're approaching the endgame now. Two targets remain, Duke Luca Abele of Serkonos, and the Usurper herself, Delilah Copperspoon. Thanks to largely staying my blade last time, I managed to nudge my overall Chaos rating down to Low. This means I'm free to judge and, if needed, execute the citizens of Karnaca once again. I'm only just under the threshold, however, so I'll need to be exacting in my final judgements, or else it might spell disaster for the whole Empire.

Tonight, however, we bring down a duke. Abele is holed up in his Grand Palace, a sprawling modernist structure made of shards of white marble which vaguely resembles a dropped pavlova. Meagan drops me off in the nearby district, letting me visit the Black Market, and providing the opportunity for a little judgement along the way.

THE SAFE HOUSE

I cross the main boulevard and head to a narrower street further up the hill. There's a gaggle of guards patrolling down the far end, so I use my optical zoom to focus the Heart on them. The officer grew up as a street urchin and now wears his uniform proudly, which is nice for him, I guess. One of his subordinates is less pleasant, however. "He stole an entire case of potted whale meat on the way to the children's home, a gift from the Empress."

What a prize git. I'm tempted, but this is only a middling moral outrage in Karnaca. I leave him be and instead decide to explore the nearby safe shop. This, incidentally, is a shop that sells safes, rather than a shop that is safe. Indeed it's rather the opposite for the owner, as he's currently being threatened by a guard.

I'm deliberating how I feel about extortion when the guard makes the decision for me. "No one knows who started that fire," he says, referring to another outlet of the store chain, with the unsubtle inference that he started it.

"Our brother died in that fire," the owner responds.

Ding ding ding! We have a winner folks!

I sneak up behind the guard and slit his throat. You'd think the owner would be thankful for me solving this problem for him. But for some reason the sight of a masked killer throws him into a panic, and he rushes out of the shop screaming for help. The two guards I spotted before rush in. I knock out the whale-meat thief, and use my new wind-blast power to knock the officer off his feet, giving him a kick to the temple as he attempts to stand.

As I depart, I notice that the meat thief is apparently also dead. My wind-blast must have slammed him into a wall, breaking something vital. Oh well, no point crying over spilled whale-meat. I move on.

I head to an apartment-block up the street. On the roof is a wind-turbine powering a wall-of-light which blocks the entrance to the Grand Palace. I disable this without the guards noticing, and then drop into a bloodfly-infested apartment below to grab a rune. As I burn the bloodfly-nests, a nest-keeper shambles into the room. I don't have any sleep darts, so I use a howling bolt to temporarily blind him, and then grab him around the neck to knock him out. As I do this, however, the bloodflies descend, and sting their own nest-keeper to death.

Two things: 1) including previous runs, I've played this game for over 40 hours and it's still finding ways to

surprise me, and 2) fucking hell *Dishonored!* Is there no limit to how grim you can get? Given the guy was basically a zombie, technically it's a mercy, although that doesn't stop me from feeling more than a little sick.

THE BLOODFLIES DESCEND, AND STING THEIR OWN NEST KEEPER TO DEATH

DOUBLE JEOPARDY

I press on to the Grand Palace. Here the duke and his cronies live in a perpetual state of debauchery and depravity. I experience this first-hand when I find a group of aristocrats throwing knives at two servants strapped to giant targets. Both servants are quite clearly dead, while one of the nobles remarks, "What was it you said? That you could hit him in the head, or avoid hitting him in the head?"

Absolute monsters. I slow time, rush in, and drop a springrazor in between them. I watch with a deep sense of satisfaction as they're torn apart in slow motion. Good riddance. The aristos aren't the only deeply repugnant individuals I discover lurking in the palace. In what

Changing the past at Stilton's mansion gave Meagan back her eye and arm.



The least-safe safe shop in all of Serkonos.





appears to be the palace bar, a group of guards are playing cards, while another is asleep behind the bar. According to the Heart, the sleeping guard covered a baker in syrup and “let the rats do the rest”, (WTAF?!) while one of the players pushed a man from a roof and made it look like an accident. A crossbow bolt to the head silently deals with the sleeper. As for the card-player, I possess him, walk him out into a nearby bedroom, and shank him in the back. This alerts two noblewomen also in the room, but they’re quickly neutralised with a pair of sleep-darts.

At this point, I move on to the duke himself. My instinct is just to kill him, only I’m mindful of my Chaos rating. Fortunately, there’s a subtler way of eliminating the duke. Abele employs a body-double. En-route to the palace, Meagan described the double as a “good man”, so perhaps we can arrange a smooth transition of power.

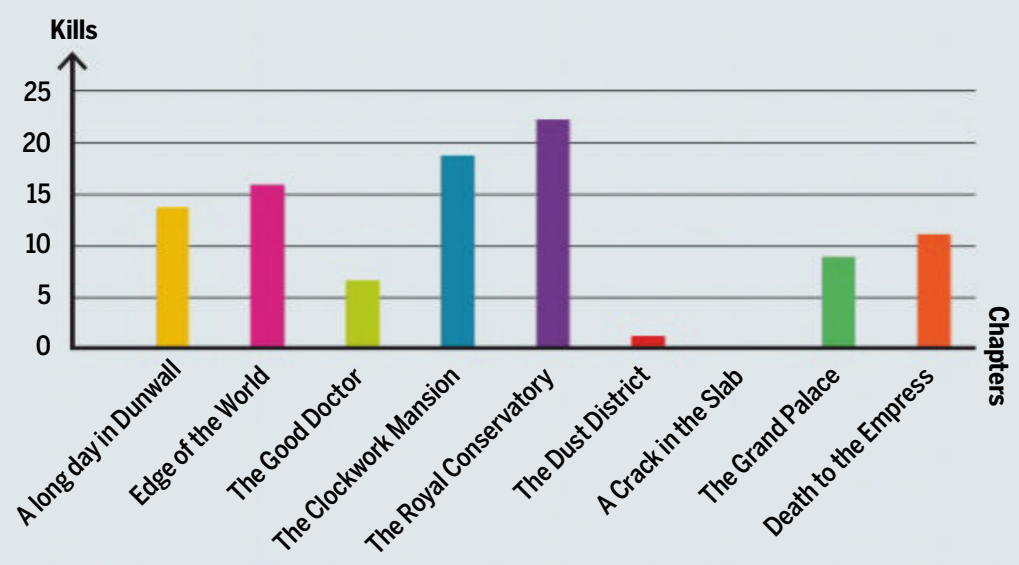
I locate the double in what appears to be a throne room. He’s guarded, but the guards are easily dealt with via a combination of possession and a really tight hug. The double agrees to my plan, stating, “I’ve spent years mimicking this asshole.” All he needs me to do is knock the duke out. I head to the real duke’s chambers and, after a little scuffle, do exactly that. The fake summons the guards, and tells them his body double went mad and tried to stage a coup. Abele is dragged off to Addermire kicking and screaming, compounding his fate with every protestation that he’s the real duke.

Our time at the palace is almost up. But there’s one, sad job left to do. Hidden in the duke’s secret vault is a statue of Delila that contains a piece of her soul, making her effectively invulnerable. Before I can kill Delilah, I need to put her soul back together. To do this, however, I need a vessel – the Heart. In other words, it’s time to say goodbye to the Judge’s most true and faithful sidekick. With Delilah’s soul corrupting it, the Heart can no longer tell me about the souls of others. When I depart Karnaca to make my final judgements, I’ll be making them alone.

HOMEcoming

We’re back where we started. Delilah’s short yet sharp reign has not been kind to Dunwall. The streets are

THE JUDGE’S TALLY *The final kill-count*



abandoned, save for prowling Wolfhounds and members of the Hatter gang. I no longer have the Heart to guide me in who’s just and who isn’t, so it’s all down to my eyes and ears. Looking around, I’m not feeling especially merciful. I won’t kill anyone without clear evidence they deserve it, but if I’m attacked unprovoked, all bets are off.

My journey to Dunwall Tower is largely uneventful. The only notable event occurs when I encounter a couple of Hatters chucking glass bottles across a courtyard. “Nothing to stop us tearing up the city!” yells one gleefully. Are you sure about that, pal? A blast from my pistol sends him sprawling into a barbed-wire fence, while I tranquillise his partner with a sleep-dart.

As I approach the tower, the city increasingly resembles a warzone. The Overseers recently assaulted the tower, but only succeeded in giving it a bold new paint-job. Moments later, I discover why. The tower is overrun by clockwork soldiers and Delilah’s witches – the bane of my judging career. Most of *Dishonored’s* factions use violence to further their own ends, but none of them delight in it quite as much as Delilah’s coven.

I’m feeling extremely stabby, but as I search for an entrance to the tower, I limit my violence to blasting the head off one witch who spots me approaching (not my specific intent, I would add).

Inside, however, I discover the witches have been up to their old tricks. About a half-dozen of them are sat around a dining table shared with an equal number of corpses. The witches are eating, chatting, laughing – it’s a banquet of depravity. I can’t let this go unpunished, but witches are powerful foes, and there are a lot of them. So I decide to enlist some help. In an adjacent room is a patrolling clockwork soldier. I slow time and blink across to the soldier’s flank, quickly rewiring its circuitry so that it will fight on my side. Immediately, the clockwork clocks the witches in the next room, and marches through the door, arm-blades raised.

What results is the most spectacular battle I’ve experienced in this entire play-through. A second clockwork soldier that I didn’t spot activates in the dining room, and rushes over to meet my clockwork bot. I don’t get to enjoy the duel, however, as I’m suddenly rushed from all sides by witches. I blast a couple with my pistol, but there are so many that I’m concerned about tipping the balance of Chaos if I kill them all.

Instead, I drop a stun-mine on the floor to knock a few unconscious, and mop up the rest with a combination of sword and crossbow.

Meanwhile, my clockwork soldier has made short work of his doppelganger, and is now carving his way





Post-coup Dunwall. It's like Britain, only less grey.

through the last remaining witches. I leave the machine to it, and head to the security room to activate the power, before ascending the elevator to confront Delilah.

Unlike the duke, there's no tangible benefit to keeping Delilah alive, and I've seen what her coven is capable of. It's a long, tough fight that takes us to an entirely different dimension.

Eventually, however, I tackle her to the ground and put a sword through her heart.

It's done. Delilah is dead, and Emily is restored to her throne. Now it's all down to numbers. Eleven dead in Dunwall, most of them in the tower's dining room. It's high, but not high enough to undo the work I did last time around. Looks like I've squeaked through without ruining the Empire. Huzzah for the Judge! Huzzah!

Before we end, I want to briefly discuss the reason for playing *Dishonored 2* in this manner. While it undoubtedly

provides an interesting (and sometimes worrying) insight into your personal ethics, the reason I like playing *Dishonored* in this way is how it encourages you to explore the full extent of the game's systems.

It's not so much about choosing who deserves to live or die (although that can be fascinating in its own right).

It's more about how you approach solving each little puzzle the rule set then throws at you. How to slip between three innocent citizens to get to the guilty one. How to fight four guards while only killing two of them. It just makes you much more aware of how broad and deep

Dishonored's mechanics go, while keeping you present and focussed in every moment.

And that's just with Corvo. Goodness knows how a Judge run plays out with Emily. Heck, maybe you can tell me. After all, Karnaca certainly isn't short of rotten eggs that need cracking. ■

I TACKLE HER TO THE GROUND AND PUT A SWORD THROUGH HER HEART



TFW when you get overexcited about your new apartment's view.



They deserved worse. But Dunwall deserves better.



REINSTALL

OLD GAMES, NEW PERSPECTIVES





In the chaos it can be difficult to determine who's winning.

TOTAL WAR: SHOGUN 2

Issuing orders in Creative Assembly's strategy series. *By Malindy Hetfeld*

Finding an entry point into the *Total War* series can feel overwhelming. There's often talk of historical accuracy or AI failings – some since rectified with patches – and in any long-standing series, the differences between games can be difficult to track. It makes sense then to simply pick a game focusing on the historical time period you're most interested in. In my case that's Japan's Sengoku period.

As I'm fond of saying, while other kids were interested in boy bands and trading card games, I studied the blade via accounts of historical sieges such as the Battle of Kawagoe. Looking at *Shogun 2*, developer Creative Assembly seems to have been influenced by the same grand

tales I enjoyed so much – tales of unlikely odds, loyalty and bravery that get adapted into Japanese television shows over and over again.

While films such as *Akira* and *Lord of the Rings* make use of large-scale battles to great effect, up to this point strategy games with their overhead views always made me feel far removed from the action. By comparison *Shogun 2*'s love for detail feels almost oppressive. Like most *Total War* games, it consists of two elements: large-scale real-time battles, and a turn-based layer of civic development that takes place on a map of the different provinces. You assume control towards the end of the Sengoku Jidai, when the war was in full swing. Increasingly unhappy with the shogunate – the military government that ruled Japan at the time – clans started to fight each

other before setting their eyes on Kyoto, the old capital. You take charge of one such clan.

CHOOSE YOUR CLAN

There are nine clans to choose from in the base game, each with their own history and characteristics. This translates to different starting positions on the map and a number of unique bonuses. The differences between the factions are fairly minor, since they all belong to one civilisation and thus developed roughly at the same speed. This means you can choose your clan without having to break out a detailed chart of pros and cons before even starting the game. Similarly, thanks to the map spanning just a single country, keeping track of your towns, trade lines and the forces en route to the next enemy is much easier than it was in those *Total War* games that literally span continents.

NEED TO KNOW

RELEASED
March 15, 2011

PUBLISHER
SEGA

DEVELOPER
Creative Assembly

LINK
www.totalwar.com



That's the theory, at least. I'm quickly learning that, even with just one island to occupy, things can be a *lot*. I wanted a more involved strategy, and that's exactly what I'm given – a game that asks me to seriously consider flanking, and requires that I make sense of divided battlefields in which several armies are fighting for their lives. Be careful what you wish for.

Trebuchets regularly miss and, during my first siege, it's frankly embarrassing how quickly the rival clan's archers dispatch my forces. Suddenly, from somewhere, a voice calls out, "Your general is in *great* danger, my lord!"

GENERAL PROTECTION

Keeping an eye on your general is vital, as their ability to inspire their troops goes so far that losing them is catastrophic for morale and causes your armies to desert the battlefield in droves. To keep your troops happy you need to coddle your general, like a toddler prone to tantrums, so that he doesn't defect, for example by making him a commissioner or letting him marry into the daimyo's family. What the general wants, the

general gets. Over time you build up an overview of your general's character traits and skills as well as a chronicle of your clan, which helps to make it feel like you're truly roleplaying a daimyo and not just sending lemmings into battle.

I like the more personal layer, but it's also a large source of stress during my first forays into battle. Normally I wouldn't bat an eyelash at losing units – it's a war after all – but I'm astoundingly invested in my general, who also turns out to be difficult to

track in the midst of all the chaos. Yet do battle I must. It's my job to take the clans immediately adjacent to my own, but my gradual expansion is regularly slowed by neighbouring clans resisting my efforts, almost as if they don't want to be occupied.

As soon as I've finished a battle, another enemy comes knocking while I'm still in the middle of replenishing my forces and upgrading my irrigation systems to satisfy the people crying out for rice. Normal life doesn't come to a complete standstill

INTERACTIVE HISTORY

Here are some historic major battles you can recreate in *Shogun 2*



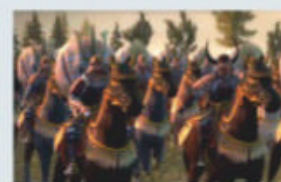
BATTLE OF OKEHAZAMA

Oda Nobunaga earned his reputation as legendary warlord by winning over 25,000 Imagawa forces with just 2,000 units.



BATTLE OF KIZUGAWAGUCHI

To show off naval battles, Creative Assembly chose one of 11 years of battle between Oda and the Ikko-Ikki Clan.



BATTLE OF ANEGAWA

Anegawa was the first alliance for Nobunaga and Tokugawa and was the first time Toyotomi lead an army into war.



BATTLE OF SEKIGAHARA

In what is considered the decisive battle for the shogunate, Tokugawa wipes out the Toyotomi Clan and its allies.



Shogun 2 regularly creates standout moments such as this.

IT'S JUST MORE ENTERTAINING THAN SITTING IN MEETINGS WITH OTHER DAIMYO

just because you're waiting for samurai to finish their training.

The civics layer occasionally feels like busywork, because as important as it is to improve the stats of my troops via a skill tree, I get most excited whenever I acquire a new unique unit or successfully pull off small manoeuvres like sending my ninja to assassinate an enemy monk in the night. It's just more entertaining than sitting in trade meetings with other daimyo. I realise I would've loved all this back when I was the kind of player who funnelled all of her time into one game. I would give a lot to have statistics telling me how much time I used to funnel into *Starcraft* way back when, but now I lack the patience for alliances and playing nice. I've become the villain, intent on just taking what she wants.

Thankfully, *Shogun 2* excels at the type of grand, Hollywood-style warfare I'm looking for. Get close to

your armies and you can relish in the sound of their footsteps across the plains like rolling thunder. There is a lot of walking (good God is there a lot of walking!) but this is the way to enjoy the spectacle. Each landscape has traits that are both beautiful to take in and can affect battles quite a bit. Sometimes it's nothing more than a rice field, or cherry blossom petals floating in the wind. At other times, it's a hillside slowing down your advance or a forest hiding enemy troops. These are characteristics of the landscape that Japanese people are very proud of and that I readily associate with the country. Watching soldiers battle each other one-on-one on these fields is as entertaining as it is startling. It's a real back and forth until suddenly one of them finds an opening. It feels real.

LEARNING CURVE

Shogun 2 is a neat package of features. The amount of things to do in a single game and the way they interconnect is a feat I can't help but marvel at, but it's a curious mixture of micromanagement and helplessness that constantly leaves me unsure of how well I'm doing.

That authenticity comes with a steep learning curve. From naval battles (which *Shogun 2* brings over from *Total War: Empire*), to the multi-tiered forts, battles in *Shogun 2* are about far more than just numbers. Unlikely odds won through clever strategising are what made the most memorable battles of the Sengoku period such standouts.

In *Shogun 2*, I need to carefully study my units and build a balanced army, yet there are many things I don't know about the enemy even as I slowly chip away at them with the help of espionage. I enjoy the historic battles the most. I've read about them for years, and they have a clearly recognisable strategy to them that my own ad hoc command still lacks, such as Oda Nobunaga taking out small camps one by one before charging at the enemy general at the battle of Okehazama.

Shogun 2 is beautiful and ambitious and varied. It's already eight years old and doesn't feel dated at all. Rather, it feels like you could do pretty much anything, and that inspires a level of devotion and time investment that has become difficult for me to justify. ■

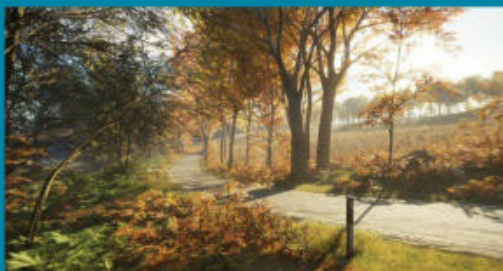
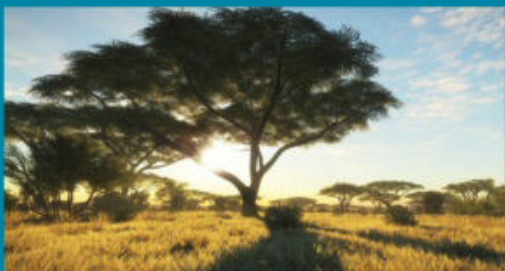


WHY I LOVE

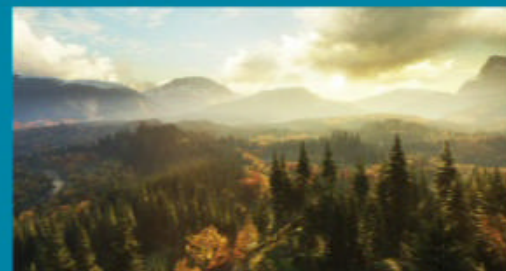
WHAT MAKES GAMES SPECIAL

NOT HUNTING IN THE HUNTER

You can't make me shoot that deer. *By Andy Kelly*



RIGHT: A view of Hirschfelden, one of the game's prettiest reserves. The lighting is stunning.



T

here's something strangely compelling about *The Hunter: Call of the Wild*.

Developed by *Just Cause* creator Avalanche, it's a slow, ponderous hunting simulator where you spend most of your time crouched in a bush waiting for an oblivious deer or coyote to stroll into your line of fire. But it has the same serene, hypnotic quality as games such as *Euro Truck Simulator 2*. Fundamentally boring, yes, but utterly, irresistibly playable.

But here's the thing – the hunting is, for me, the least interesting thing about *The Hunter*. I mean, I enjoy it. There's something satisfying about quietly, meticulously stalking a moose through a Siberian forest then dropping it with a well-placed shot. I'd never do this in real life, of course. I like moose, and I could never bring myself to shoot one with a high-powered rifle. The hunting mechanics are deep, with a nice scoring system, but they're never my main reason for loading this game up.

No, what I love about *The Hunter* is the world the developers have created. It, rather unexpectedly, features some of the most convincing natural environments I've ever encountered in any game – let alone a niche hunting sim. Its selection of autumnal forests, grassy plains, and rolling fields are way more convincing and atmospheric than even games such as *Far Cry 5*, which probably has ten times its budget. And it's these immersive landscapes that keep me coming back.

NATURE CALLS

At the right time of day, when the sun is at just the right angle and elevation, the forests in *The Hunter* are genuinely stunning. Golden light

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RELEASED
Feb 16, 2017

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CHILL OUT *The most relaxing games on PC*



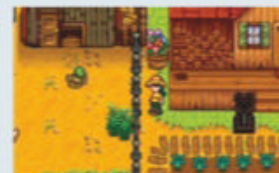
EURO TRUCK SIMULATOR 2

Drive a truck along grey highways as the rain pours and your wipers swoosh back and forth.



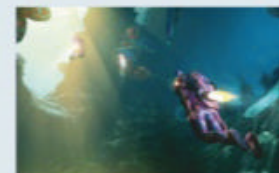
ABZU

Swim gracefully through a series of colourful, psychedelic underwater worlds to an achingly beautiful score.



STARDEW VALLEY

You live your life on your own terms in the peaceful Stardew Valley, working as hard (or not) as you like. The life.



NO MAN'S SKY

Play in Creative mode and Hello's colourful space sim becomes a relaxing screensaver for your brain.

pours through the trees, casting a glow over the dense foliage, which sways realistically in the wind. But it's more than just a visual treat – the sound is just as good. If you stop and listen to the ambient sound, you get a palpable sense of *being* there – more than any other game I can think of.

Which, I guess, makes sense in a game where you spend so much time sitting still. But it's surprising to find this fidelity of visual and aural detail in what is, let's be honest, a pretty obscure hunting game. And it makes just going for a walk in these lush, dynamic forests a real treat. With a good pair of headphones, you can totally get lost in the world around you. Sure, if you hear an animal you can track it and kill it. But interrupting such a chill world with a gunshot almost feels wrong.

What's cool about *The Hunter* is that as well as a rifle, you also get a camera. The system isn't as deep as I'd like – it would be cool if you could buy different models and lenses and so on – but it's a legitimate way to play the game. I've spent more time wandering through the forests of Germany, the African plains, and the Siberian tundra, taking photos, than indulging in the hunting side of the game. The screenshots illustrating this article were all taken by me on my many rambles through the game.

I love it when games are flexible enough to let you play them your own way. I once played *Skyrim* as a regular citizen, working for a living, buying food and drink, running

errands, avoiding quests. It was a surprisingly fun way to experience the game, and gave me a new perspective on that world. And it's the same with *The Hunter*. The setting is rich enough that you can enjoy it for what it is, rather than what you do in it, and I appreciate it when a game has that quality.

I'm not saying you should spend money on *The Hunter* specifically to walk around a forest taking photos. But then again, maybe I am? If I hadn't fired a single bullet, I still think I'd have considered it a worthy

I LOVE IT WHEN GAMES ARE FLEXIBLE ENOUGH TO LET YOU PLAY THEM YOUR OWN WAY

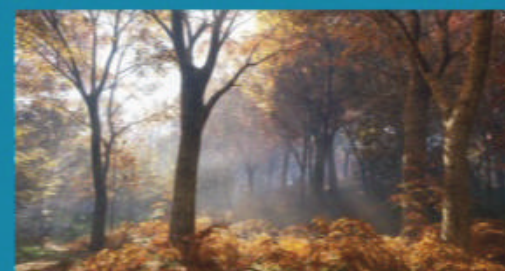
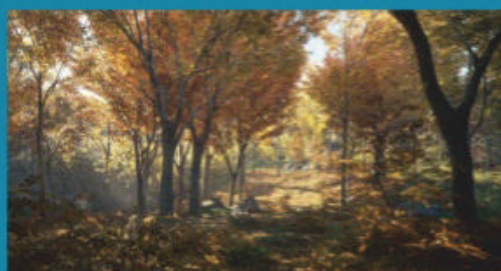
purchase. A piece of advice, though – even though the fact it's DLC is a bit cynical, definitely buy the quad bike add-on. It's fairly cheap, and it makes getting around the game's enormous maps less frustrating.

I reviewed *The Hunter* when it was first released and gave it 60%, and I stand by that, because the mission design is bad and the pace (especially without the bike) can be interminable. But in terms of atmosphere and environments, not much else touches it.

You'll just have to decide if you want to destroy that nice, tranquil atmosphere by firing a giant rifle at a gentle, harmless moose. ■



RIGHT: The forests in *The Hunter* feel genuinely deep and dense, with impressive foliage.



MALINDY
HETFELD

Do you know which side your bread is buttered? Of course you do, it's on the right-hand side. Anything else would just be silly.

GRAND MACHINATIONS

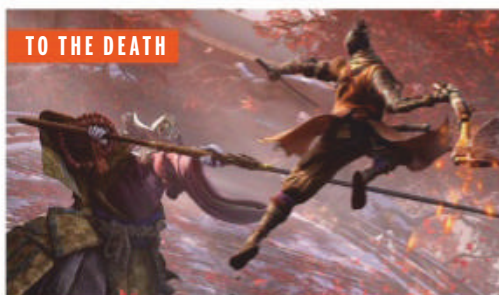


DIVINITY: ORIGINAL SIN II

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→ With intricate systems that offer multiple solutions to every problem, you're going to want to talk to everyone and look at everything. You'll still be surprised by how *that thing* possibly could have happened – whether it's in a conversation with an NPC or during the relentlessly punishing combat.

TO THE DEATH



SEKIRO: SHADOWS DIE TWICE

www.sekirothegame.com

→ It's astounding how quickly my eternal power fantasy of being a ninja – one who traverses rooftops and carries firecrackers in a tube in his arm – evaporated when an ogre stepped on my head several times. On the plus side, I was also bitten by a giant snake. *Sekiro* is difficult, but it actively rewards curiosity.

ALIEN INVASION



INTO THE BREACH

www.subsetgames.com

→ A great game to cure indecision, once you accept that some sacrifices are necessary. You ponder positioning and skill use just as critically, but must risk collateral damage in order to win back ground from the highly intelligent and weirdly cute alien force that encroaches on you from all sides.

TAUNTING GHOSTS



OXENFREE

www.nightschoolstudio.com

→ A group of teenagers gets stuck on a haunted island and instead of being heroic, they snipe at each other and make terrible jokes. The dialogue is wonderfully natural and, in the tradition of '80s adventure films, *Oxenfree* proves that to beat actual ghosts, you first have to overcome your own demons.

MUST
★
PLAY

A PERSONAL LIST
OF THE BEST
GAMES YOU CAN
PLAY RIGHT NOW

by Malindy Hetfeld

STILL WALKING

THE WALKING DEAD:
THE FINAL SEASON

www.skybound.com

→ The final season tries to consider a life after zombies, which is as hard as imagining a game industry without Telltale. This is a game that, among all the head splitting, finds time to address the importance of heartfelt apologies and how to examine and vocalise your feelings.

CARD CAPTOR



SLAY THE SPIRE

www.megacrit.com

→ I'll just play one more battle, and then I'm going to go to bed, I swear. *Slay the Spire* was made for me with its dungeon crawler stylings, round-based combat and library of skill cards. Deck building used to seem intimidating, but here experimenting is fun, making me feel like no one has the same deck as me.

DELIGHTFUL DELINQUENCY

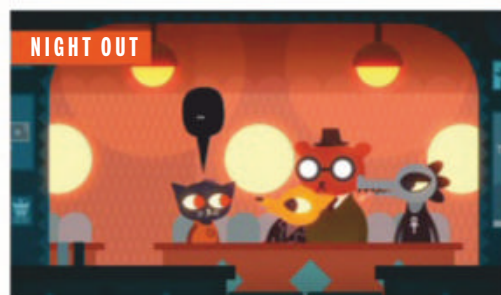


YAKUZA KIWAMI

yakuza.sega.com/kiwami

→ The next chapter in Sega's crime saga once again showcases that Kazuma Kiryu is one of the best game protagonists: equal parts determined, kind and utterly clueless. He displays all of this in a new tale of loyalty and betrayal, and in the substories that make each visit to Kamurocho so lively.

NIGHT OUT



NIGHT IN THE WOODS

www.nightinthewoods.com

→ After quitting college, May is lost. Aimlessly, she returns to her old home, but even as she busies herself with small town mysteries, her anxieties won't go away, and it feels like her friends have moved on. The dialogue is in turns funny and bittersweet, making me feel as if I knew May well by the end.



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- Billy's punched the village donkey
- Doris let off in the ice cream truck

...UNTIL
**MAY
30**

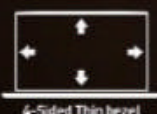


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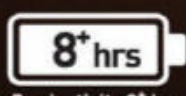


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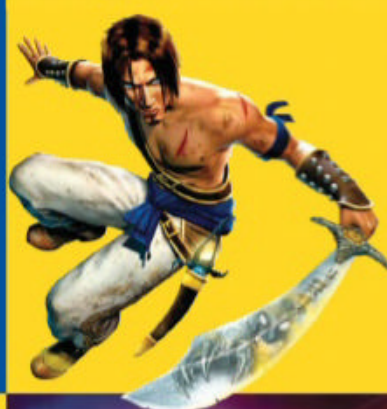
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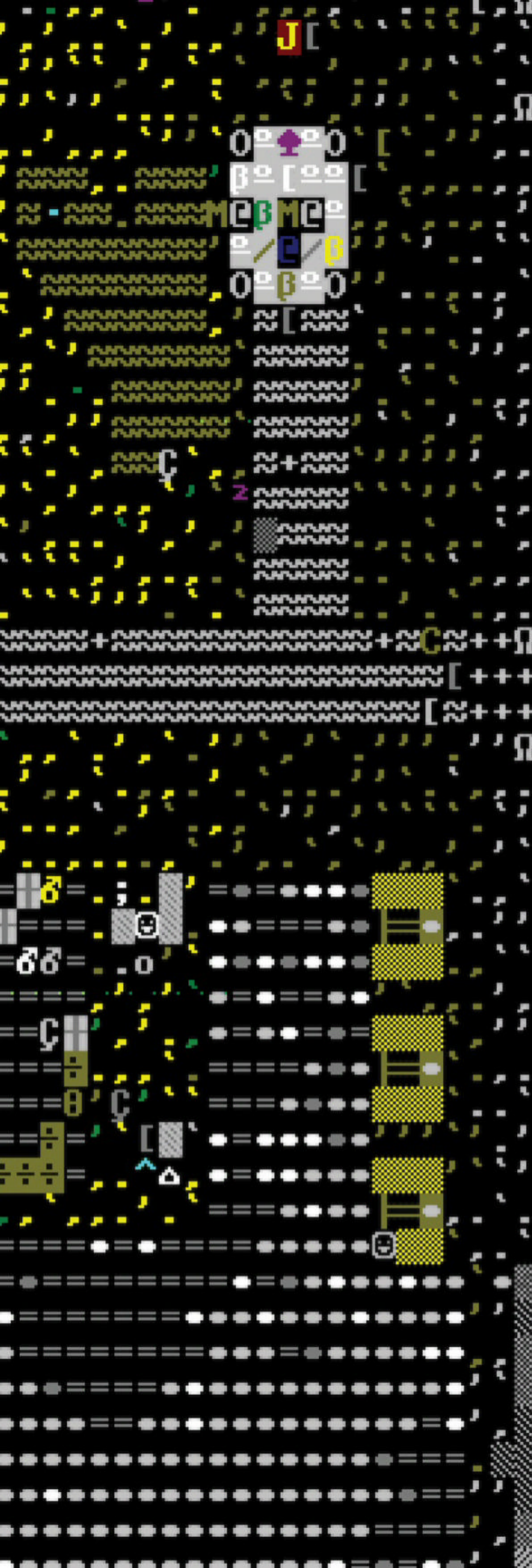
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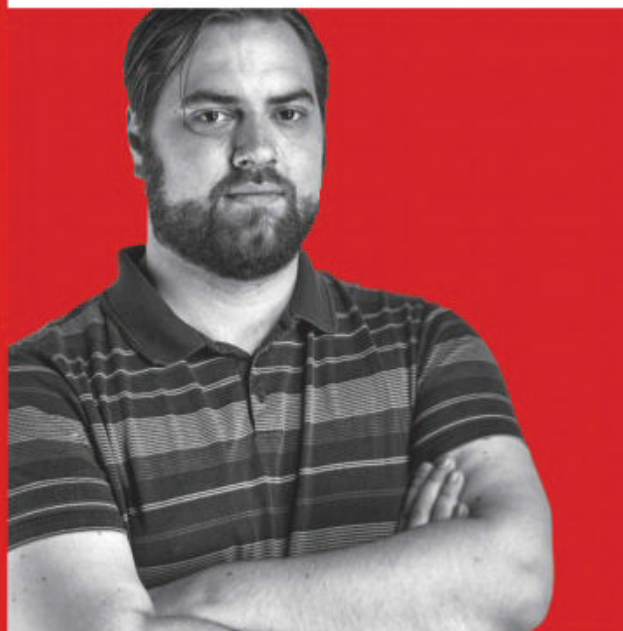
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“TAKE A BREAK FROM THE NEW. CELEBRATE WHAT’S OLD”

**PHIL SAVAGE**Specialist in
The '90s**This month**Fondly remembered
playing rubbish shareware
downloads.

Sometimes it can be easy to be carried away by what's new. There's always some exciting looking game on the horizon. There's always a handful of recently released games that it feels everyone is playing and having opinions about.

The new release cycle is incredible and surprising and terrifying and tiring. And Sometimes it's nice to look back instead. While we often celebrate the past in our Extra Life section, this bonus mag is dedicated to some of our best writing on classic games. Take a break from what's new. Celebrate what's old.

PHIL SAVAGE**EDITOR**

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10 YEARS OF GOG



The history of **GOOD OLD GAMES**:
how it began, and how it makes
classic games work again.

By Alex Wiltshire

Ten years ago, not long after a young CD Projekt had founded a development studio and released *The Witcher*, the company founded something else: GOG.com. Back then, though, GOG wasn't just GOG. It was Good Old Games, a new digital store aimed at selling only old games. So much has changed about the way we buy and play games in that decade, it's hard to remember that, in 2008, that was a strange idea.

Digital distribution is now normal. DRM-free games are pretty normal, too, and so is selling classic games. But GOG had to pioneer these concepts as its inexperienced team of upstarts from Eastern Europe built a platform, convinced developers and publishers to join them, learned to become IP rights detectives, and figured out how to make old software run on new hardware.

This is the story of how Good Old Games began, and how GOG today tracks down classic games and makes them work again, in the words of some of GOG's key players.



10 Years of GOG

GOOD OLD DAYS

When GOG managing director Piotr Karwowski started working at CD Projekt as a web designer 20 years ago, they faced a serious problem: game piracy in Poland was rife.

Piotr Karwowski: In the early 2000s, before CD Projekt got into game development, we were distributing games in boxes. Piracy in Poland was a big issue, but what were immensely popular were rereleases of classics in a mid-price format, where in one box you could find Baldur's Gate 1 and 2, Icewind Dale and Planescape Torment all for \$15, packed with maps. It was all about focusing on value to fight piracy, and also making it hassle free, with no activations so it worked out of the box.

In the latter half of the decade, as digital distribution rose, CD Projekt founders Marcin Iwinski and Michał Kiciński saw potential in using what they'd learned in fighting piracy for something new.

Piotr Karwowski: I learned of the idea for GOG sometime in March 2007. I met with Michał Kiciński and he said he had this cool idea and asked if I could kick start it somehow. The idea was on a post-it note with just four points: 'two price-points', 'DRM-free', 'simple user experience', 'classics'. There was no grand scheme for how we'd do it. I felt a bit scared. I had no idea how we'd do it.

GOG



Piotr Karwowski
Managing Director



Oleg Klapovsky
Senior VP, BizDev and Operations



Marta Adamska
Head of BizDev



Marcin Paczynski
Head of Product



One of GOG's first challenges was convincing publishers and developers that the project would work. Oleg Klapovsky is GOG's senior vice president of bizdev and operations, and was the first person to reach out to potential partners.

Oleg Klapovsky:

The reaction was always different. Initially they just didn't understand what we wanted to do. Then some publishers looked at us and said, 'Hey, you guys are crazy. You won't make any money out of

it.' Others asked us how we'd make the games work, because they didn't have masters for them. They were worried that it'd take lots of their time, but it

wasn't the case. We did everything ourselves, and we had a motto: 'The only thing you need to do is write your signature and then send us invoices.'

"INITIALLY THEY JUST DIDN'T UNDERSTAND WHAT WE WANTED TO DO"

Persuading other companies wasn't the extent of GOG's early challenges. Another was how to build a platform that would look nice, work smoothly,





and could serve terabytes of data on an international scale.

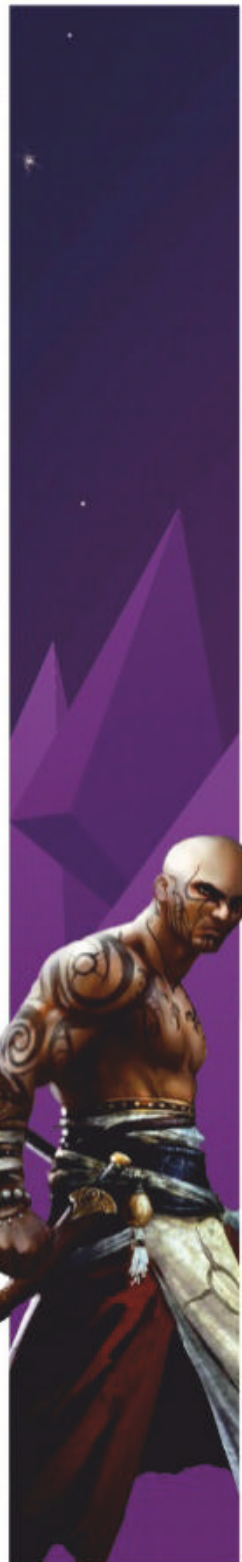
Piotr Karwowski: Back then there were no cloud services and the people we hired had no experience of digital distribution. We had to figure out how to get it to work. And I know this will sound counterintuitive but I think it was the biggest blessing for GOG. We believed it could be done. I'm pretty sure that if we had industry veterans on the team, they'd have told us to drop the whole idea, but we were naive and it worked. There's a Terry Pratchett quote I love dearly, which goes, 'The vital ingredient of success is not knowing that what you attempt cannot be done.'

Over the course of 2007, GOG the platform was steadily built, and everyone at CD Projekt loved it. That was all well and good, but GOG still had a major problem: it didn't have any games to sell.

Piotr Karwowski: As a distributor, CD Projekt knew a lot of companies [like] Ubisoft and Blizzard, so we were certain they'd agree. I mean, their games were pirated anyway! But it proved not to be so easy. The holy grail to find a company to sign up took seven or eight months; we knocked on every door. No one wanted to be first.

Oleg Klapovsky: Interplay were different, because the only rights they had were rights for super-old games, and some of them weren't sold anywhere. For Interplay, GOG was an easy deal because they couldn't sell these titles anywhere else.

Marta Adamska: The signature took ages and at the end of the day they said,



LEFT: In the '90s, CD Projekt helped bring *Baldur's Gate* to Poland.

BELOW: *Baldur's Gate II* was made available on GOG in November 2010.



screw it, it's old titles anyway, it's going to be fine, and it was! Now they're one of our awesome, awesome partners.

GETTING THE RIGHTS

Marta Adamska is head of bizdev at GOG, which entails a great deal of sleuthing to find the people who own the rights to classic games so GOG can sell them.

Marta Adamska: With classic titles, most rights are lost between

companies, liquidation, bankruptcies, mergers and acquisitions. And it's not always that obvious. Some agreements are written in a way where after a certain amount of time the rights revert to the developer. But the rights for what? The code? The IP? The character, the music? Actually, every one is separate. There are games where we've signed five-way agreements, and some rights went to one party and are blocked by another. It's insanely complicated to track it all.



Dune II is one of the more requested games on GOG's community wishlist.

» Often, the first step is to approach the original developers.

Marta Adamska: I come from the perspective that the creator is the one who is going to care most, and [is the] most likely to know where the rights remain. Then I go to the publisher, who has probably gone bankrupt. But nothing disappears when it comes to rights. They're there somewhere, and someone must have inherited or acquired them.

That was the case for the *Forgotten Realms* games. They were really difficult. They were journeys through pain, but Oleg managed to find all the people who were involved. He worked for years to make that happen.

"IT TOOK YEARS, EXPLAINING THAT WE'RE NOT SOME SHADY COMPANY"

Oleg Klapovsky: I was always a fan of the *Eye of the Beholder* games, and I always wondered who had the rights. People always told me that they were part of this merger and that acquisition, but when I checked I couldn't find proof. I was talking a lot to Wizards of the

Coast at the time, and I asked them, since it was their IP, if they knew who worked on it. They gave some hints and I started talking to some producers and ex-owners and

slowly, step-by-step, we came to a company that has nothing to do with games nowadays that just had all these old titles lying around. They'd forgotten about them!

We asked if they were willing to make

a deal, and it took one or two years, explaining that we're not some shady company. We were surprised by what we found there, including the rights for the code to the *Forgotten Realms* games! I thought they'd gone to Ubisoft.

Not everyone sees the appeal of bringing old games back from limbo.

Marta Adamska: With one game, I can't say which, we found all the rights had reverted to the developer. We found him and one of the team added him on LinkedIn, but there was no reply. We looked through forums, and through some weird old website found his email address and wrote to him. But his daughter replied and sadly, she said he'd died five years ago. We said we'd love to release the game, and she had no clue about games whatsoever. I guess for her it was too high a barrier in terms of understanding what it was all about.

Then there were the *Dune* games. We'd all love to see *Dune II* come back, right?

Marta Adamska: Oh my god, we've spoken to so many people who were even remotely engaged in the process of creating *Dune II*. Westwood was involved and as it turned out, not all the rights went to EA when they bought them. Some code rights went to some of the actual programmers, but they were residual so we'd need to sign with both them and EA. Talking to EA is always a huge process because they're



such a huge company. Asking for the documents, which are in paper form, that's a level of time and engagement that might not be worth it in terms of business. But there was this one guy who knew about the case because he was personally interested and he said that all the rights had reverted to Frank Herbert's family.

Somehow, I don't want to know how, one colleague got a contact for them, and they unfortunately said they didn't want to revive anything. It wasn't a case of not understanding games, just a straight-up, 'If it's old it should stay old'. It was so unbelievably frustrating. But of course, they have a right to that decision. It's theirs. If they feel so strongly about it, who are we to judge them for that?

Oleg Klapovsky: Unfortunately, *Dune*, even though it's one of my most loved titles, never worked out. But we keep chasing everything on the list, once a year or every two years. We don't give up on any title; it's just a matter of how regularly we chase, and maybe one day something will happen.

Marta Adamska: We revisit these situations once a year or so, because maybe it wasn't a good moment. Maybe we caught the daughter of that developer by surprise. We'll send her some articles about classic games, show her how happy people are. I'm hoping that's going to work.



ABOVE: Marcin Paczynski started as a tester playing *Prince of Persia*.

BELOW: A look inside GOG's office.

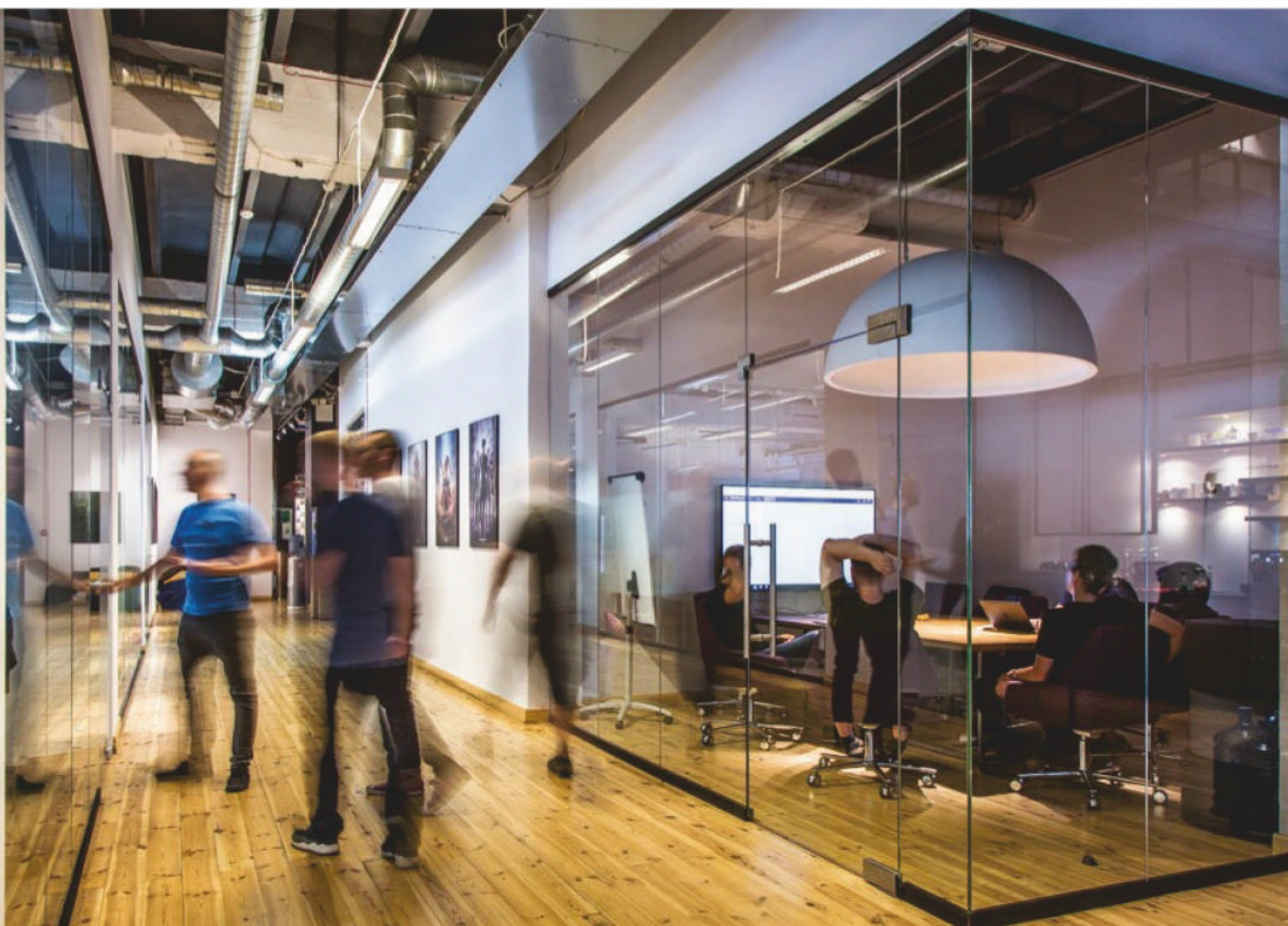
OLD GAMES REBORN

Once a game has finally been signed, it's down to GOG's head of product, Marcin Paczynski, and his team to get it ready to release.

Marcin Paczynski: I was hired in March 2009 as a tester. I was told, hey, this is your PC, and your first game to test is *Prince of Persia: The Sands of Time*. We will be releasing it in two days, so just play it for a few hours. That was my job! So it started with a pretty good game.

But then I played games like *Crystals of Aborea*, an Ishar RPG, where there's no map. Those games were very difficult! Very, very annoying at times. I was the newest guy, so the best titles were given to the others. Then I got to enjoy those games. Being forced to do it, I started to see why they're considered classics.

Getting old games working on modern Windows systems is often difficult. For the oldest, GOG's biggest >>



10 Years of GOG

➤ weapon is the DOS emulator DOSBox. One of its core developers, Peter 'Qbix' Veenstra, frequently helps out.

Marcin Paczynski: Most of the time all we get is email with a title and a contact person, and that's basically it. With *Harvester* there were a lot of issues with how its movies are displayed. Qbix was helping us but we couldn't find the correct codec. It was randomly happening across the whole game, and every time a tester came up to a new problem, we'd try a different codec and have to start the game all over again. Even the last outro movie went wrong, so we needed to go back to square one right at the end.

Many games don't work perfectly in vanilla DOSBox. GOG has to fiddle with many settings, including scaling, controller setups and CPU cycles, sometimes having to dynamically set them because different parts of a game behave differently.

Marcin Paczynski: For *Theme Park* we had to ask Qbix to create a separate branch of DOSBox. The game was all over the place, it didn't work at all. The biggest problem was with memory allocation. We had previous problems with *Realms of Arkania*, where the last boss was basically unbeatable because of the memory allocation issue. But there are games that are much more



difficult, and those are the early Windows games. Here is where we have the majority of the fun, so to speak.

After all, before DirectX 9 was released in 2002, there were few standards for PC.

Marcin Paczynski: A game is like a Pandora's box. You open it and it can be all over the place. When we first launched *Jedi Knight: Mysteries of the Sith*, the game is 3D but the land was 2D and there were no textures. Everything was white. It was unplayable. It can take a couple of months to be able to release those games.

Marta Adamska: *Indiana Jones and the Infernal Machine* was completely not compatible with new operating systems, and our product team had to rebuild it to make it run on Win 7, 8 and 10... without having the source code. We actually added cloud saves to that one as well, so it's a fairly modern experience now.

Marcin Paczynski: One of the problems we had with *Indiana Jones and the Infernal Machine*, and this is one of the reasons we do full playthroughs from beginning to the end, was that at the very end, an elevator that's supposed to take the player to the next

Theme Park required a separate branch of DOSBox to work.



level was gone. At first, we thought it was caused by one of our fixes, but it turned out that it was a known bug and the only workaround is to restart the chapter until it works, or to find a saved game where the elevator is present. We were able to fix it.

GOG's team isn't the only one reworking PC games to get them running again. Many game fans have gathered community fixes and patches, and their makers are almost always happy to help.

Marcin Paczynski: The game is their passion as it is ours, so they love the idea that the game is kind of immortalised on GOG. It's under our official care, and we commit for it to work in years to come. But that being said, we are not always able to use community fixes because they can change how the game behaves, and it's very important for us to maintain the original experience. We discuss whether to fix something or whether it's basically how the game is remembered. I don't want to mention any titles but we have some famously broken games on GOG, and it's a part of preserving their history if a character levitates in a cutscene or something. That means we create our own fixes, but we make sure that our version of the game is compatible with what the community has created.

For *Oblivion* we directly contacted

BOTTOM RIGHT: GOG worked with the creators of script extender mods for its release of *Oblivion*.

BELOW: Some games take a lot of effort to get working on modern systems.

the community, in particular the creators of script extenders, because they had to be created specifically for our version. Before the game was released we supplied them with our build so at launch they were compatible.

Getting a game onto GOG is tremendously complex, sometimes taking years of detective work, negotiation and technical wizardry. It's hard to see all that from the outside, where all you see is the storefront.

Piotr Karwowski:

We wanted it to be as good a platform as possible so that the first

impression people would have was positive. It's a crazy platform from Eastern Europe, and it couldn't look like some scamming site.

Marcin Paczynski: People ask us things like, 'Why don't you have *Diablo*? What the hell guys, what are you doing?' Before I joined GOG I was like that, too. It seemed simple, I could buy these games in my local store, so why couldn't

I buy them on GOG? It didn't make sense, but it turns out that it's much more complicated than it seems.

GOG released *Indiana Jones and the Infernal Machine* as part of its 10th anniversary celebration in October 2018, alongside famously graphic shooter *Soldier of Fortune*. Around the same time it also faced widespread criticism for a social

media post for the second time that year. GOG deleted the tweet and issued a statement that "GOG should focus only on games. We

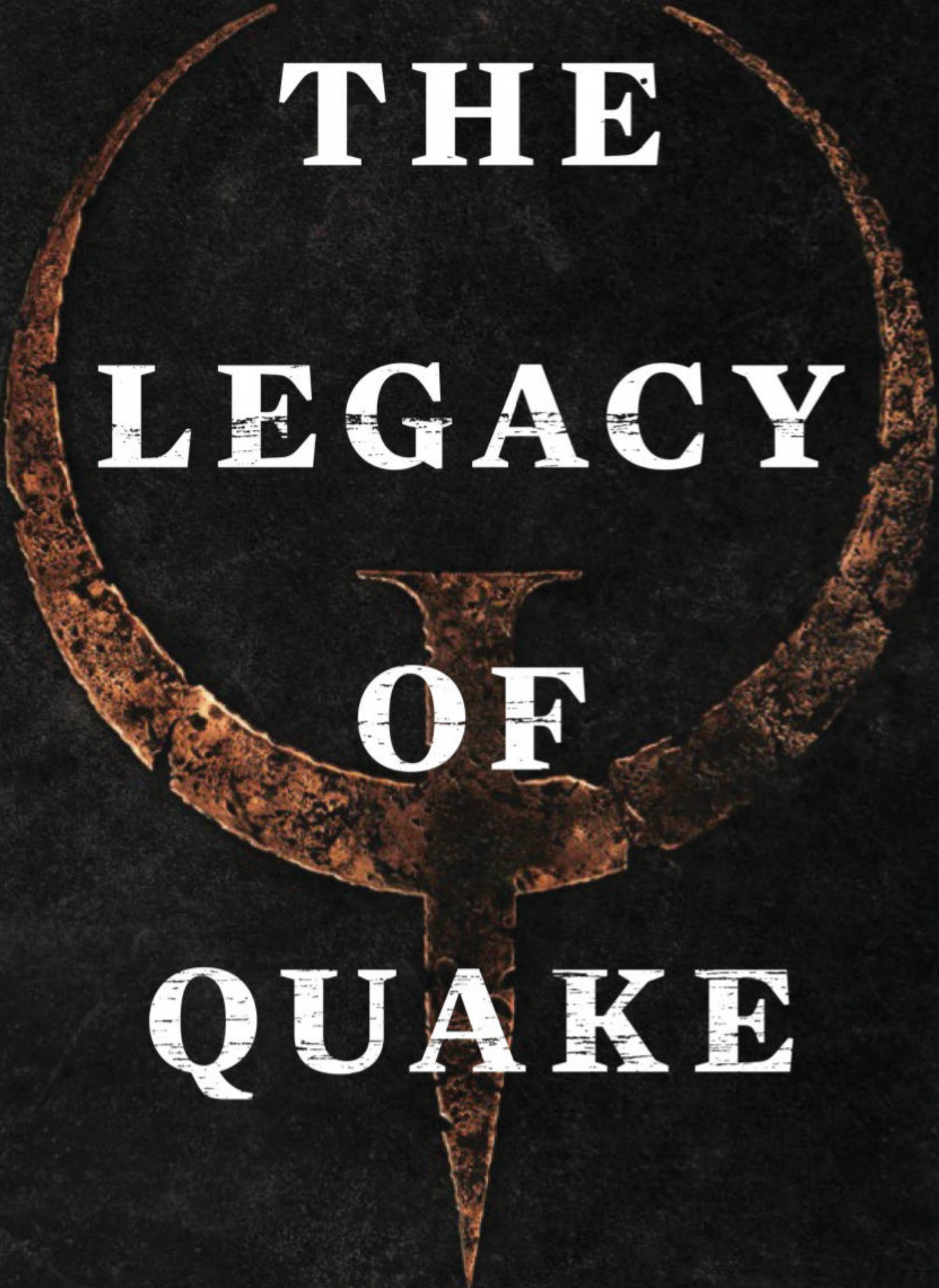
acknowledge that

and we commit to it." It later fired the community manager behind those tweets.

Today GOG's store features many new games side-by-side with old ones, and continues to add more classics. In the past few months, additions have included *Flashback*, *Gekido: Kintaro's Revenge*, and, yes, at last, *Diablo*. ■

"FOR OBLIVION WE DIRECTLY CONTACTED THE COMMUNITY"





THE LEGACY OF QUAKE

By Richard Cobbett

TWENTY YEARS AGO, ID SOFTWARE RELEASED **QUAKE**. YOU'VE PROBABLY HEARD OF IT.

WHAT'S LESS KNOWN IS THAT **QUAKE** WAS AN IDEA THAT HAD BEEN GESTATING SINCE ID'S EARLY DAYS, BACK IN THE ERA WHEN IT WAS BEST KNOWN FOR THE SIDE-SCROLLING *COMMANDER KEEN* SERIES.

THE FIRST *KEEN* PROMISED THAT COMING SOON AS *THE FIGHT FOR JUSTICE*, AN EPIC RPG STARRING **QUAKE** – “THE STRONGEST, MOST DANGEROUS PERSON ON THE CONTINENT” – WHO WOULD EXPLORE AN EPIC RPG WORLD ARMED WITH A HAMMER IN WHAT ID WAS ALREADY CALLING “THE FINEST PC GAME YET.”

INSTEAD, IT WOULD TAKE HALF A DECADE BEFORE **QUAKE**'S ADVENTURE CAME OUT, BREAKING BOTH TECHNICAL LIMITS AND ID SOFTWARE ITSELF.

The Legacy of Quake

When *Quake* arrived, it was a true 3D action game – everything built in polygons. Until then, most games had just faked it. *Wolfenstein 3D* took place on entirely flat maps. *Doom* offered different heights, but everything was still drawn in 2D. It wasn't possible to have rooms under rooms and the like. *Duke Nukem 3D* and other Build engine games, particularly *Shadow Warrior*, used advanced cheats to fake the effect. When you jumped into water for instance, you were actually invisibly teleported into another zone elsewhere on the map. *Quake* was truly 3D, doing things like spiral staircases and lava pits for real, and being as twisty and turny as it liked.

There had been full 3D games of course, like *Descent*, or the Freescape games that powered the likes of *Castle Master* even as far back as the ZX Spectrum. To do this, though, they typically had to choose between simple and slow. *Quake* didn't. It was a technical showpiece and it moved like a greased-up ferret on a decent PC. No excuses. No compromises.

Or at least, no technical compromises. Of *Quake*'s three great achievements, the single-player game is easily the weakest. It's not a terrible game or anything, but where *Doom* still stands up as a great campaign full of detail and wonderful design despite its simplicity, *Quake* is a largely bland and joyless experience whose memorable moments were almost entirely restricted to the first shareware episode. They were pretty cool, though. A main menu in the

form of a 3D level, with each chapter's area themed around the aesthetic to follow, forcing you to jump a lava pit to select hard mode and seek out the Nightmare mode in the small level beyond. Big baddie Chthon, hurling fire in his lava lair. The first time having your face eaten off by a Fiend. The low-gravity physics of the secret level, Ziggurat Vertigo. They're effective, as was the experience of being in a fast-paced 3D world full of action.

Players hoping for a constant stream of such innovation were disappointed. Despite the Lovecraftian influences, there was little to fear or any sense of anything great going on. There were no more giant, dramatic bosses, with the final one, Shub-Niggerrauth, just being a static blob defeated with a cheap telefrag rather than a weapon. There was little sense of place. The levels were murky shooting galleries, where even *Doom* had tried to make its locations feel like real locations – to whatever degree of 'real' you can get from starbases slowly being taken over by biotechnology. Certainly players just coming in from *Duke Nukem 3D* and its real-world settings and constant variety couldn't help but be disappointed, even if *Quake* has honestly aged much better. It's still dull, but at least unlike *Duke* it's not writing cheques its engine long stopped being able to cash, and much easier to take as a simple shooter rather than a bigger experience.

FAULT LINES

The main problem was that after years of promises and expectation, to have a game that was basically *Doom* again – only set in a castle – was

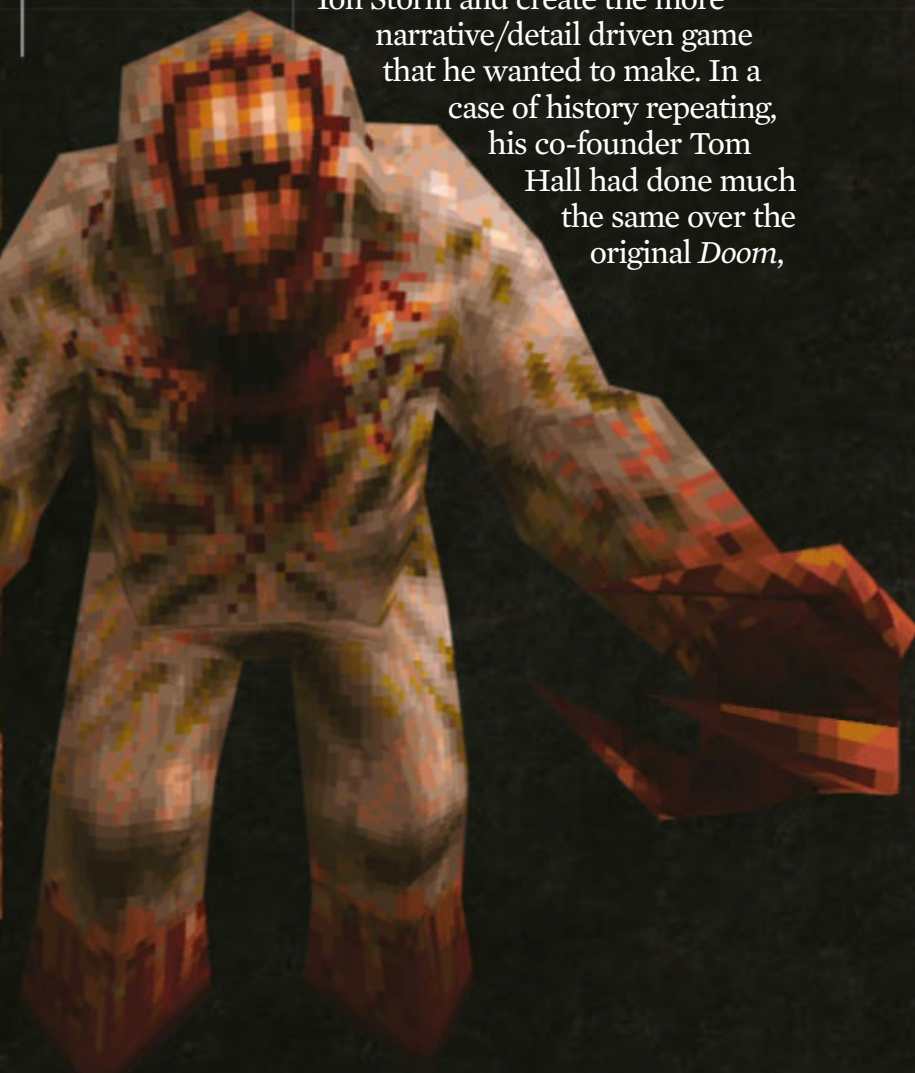


ABOVE: Chthon, one of the biggest, scariest bosses. Bring rockets.

BOTTOM LEFT: Despite the simple geometry, it's an atmospheric game.

RIGHT: The way the enemies spurt blood is gruesomely satisfying.

something of a letdown both internally and externally. All the RPG features, most planned new gameplay concepts, even the idea of a main character wielding a hammer, had been sucked out, mostly to get the thing out of the door. This led to a major schism within id. John Romero packed his bags to go start Ion Storm and create the more narrative/detail driven game that he wanted to make. In a case of history repeating, his co-founder Tom Hall had done much the same over the original *Doom*,





which he'd also envisioned as being much more of a story-driven experience than it ended up being.

Luckily, multiplayer was a whole other matter. Here, the stripped down simplicity and full 3D allowed for fantastic arena design in atmospheric levels full of cubby-holes to camp and launch assaults from, and even the occasional gimmick, like hitting a button to slide back a level's floor and drop unwary players into a pool of lava. It felt great. The weapons had real kick. Gibbing other players was a pleasure.

Outside the game, it helped that by 1996 online play was finally becoming viable for PC gamers across the world. While *Doom* had spawned a huge scene in its day, getting online in 1993 was a pipe dream for most players outside of universities. At home, gamers were lucky to have a null-modem cable to connect two PCs together, never mind enjoy the fun of epic LAN parties. Those who could got to enjoy a truly wonderful experience.

And so, people played *Quake*, and saw that *Quake* was good. The rocket jump alone took *Quake* to a whole new level. This wasn't an id invention, but a discovery by fans, so of course the maps hadn't been

WHEN YOU BOUGHT QUAKE, YOU WERE BUYING INTO A WHOLE UNIVERSE OF CONTENT



designed to handle it. The result? One of the net's first famous speed-runs, *Quake Done Quick*, in which the whole game was obliterated in under twenty minutes with tricks like bunny-hopping to raise incredible speed, and rockets to hop through what were meant to be tantalising doors only intended to be accessed after collecting a key or going all around the houses.

Playing fairly or not, the raw sense of place and weight that 3D offered soon made the fakery of 2.5D untenable. It became impossible to ignore that sprites were just two-dimensional, and that when killed, their collapse was a totally canned animation rather than reacting properly to physics. (It wouldn't be until *Half-Life* that games took the next step and made it standard to give characters skeletons instead of keyframed animation, ushering in the still ongoing ragdoll comedy era).

HOLD THE FORT

What all of *Quake*'s technology really empowered though was its community. It was the first game-as-platform, made possible not just by the 3D engine, but Carmack

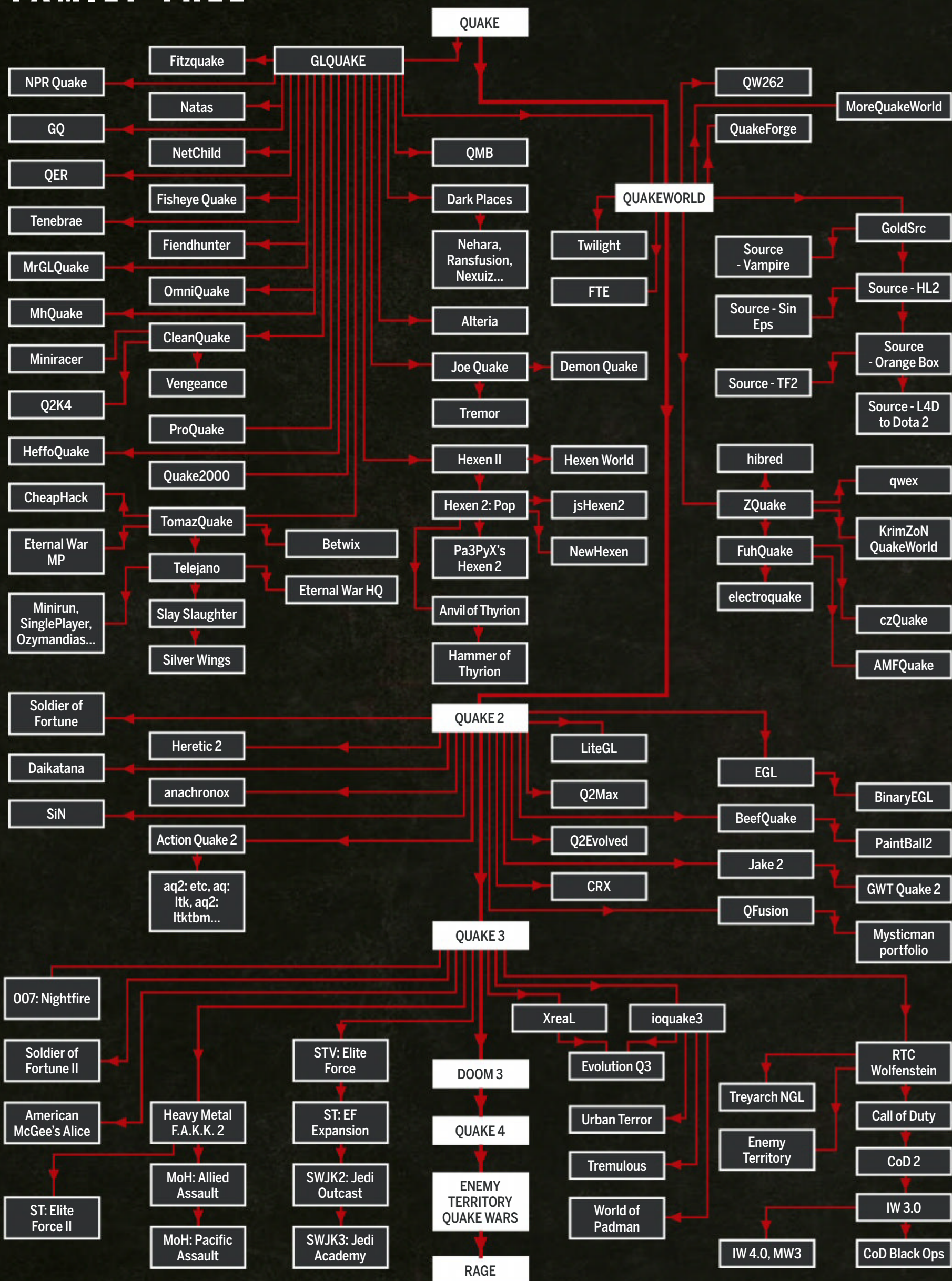
including an interpreted language called QuakeC that allowed modders to do more than simply create their own levels and make the monsters look like Bart Simpson. They could bend the engine to their wishes.

And the modding community ran with this. When you bought *Quake*, you were buying into a whole universe of content online. Initially this was limited to simple-but-cool additions, like giving the player a grappling hook to scale and swing around levels in ways that had been impossible with previous 2D engines. Experiments gave way to full 'total conversions' like *AirQuake*, which swapped the players out for vehicles and turned deathmatch into a 3D vehicle combat game. Others proved that the sky wasn't close to being the limit. *Team Fortress*, for example, began as a *Quake* mod, launching with the Scout, Sniper, Soldier, Demoman and Medic classes and building from there.

The ability to create stages, have polygonal characters, and have multiple people control them in 'scenes' also spawned machinima filmmaking. *Quake*'s early examples of machinima may be the Fred Ott's Sneeze of the genre by modern standards, with celebrated stuff like



FAMILY TREE





FAR LEFT: Using a rocket in close quarters is asking for a quick death.

LEFT: Shamblers are the most powerful regular *Quake* enemy.

BOTTOM: The nailgun is another reason *Quake*'s combat is great.

» Blahbalicious and Apartment Huntin' now looking somewhat... yeah... in the era of Red vs. Blue and Source Filmmaker and whatever the hell people are doing to the Overwatch girls today. At the time though, they were often very impressive, especially when run live in-engine, and did pave the way for something new.

Much as the *Doom* mapping community still puts out new levels, *Quake* still has a modding scene. In 2017, *Arcane Dimensions* garnered headlines for being the biggest mod in *Quake* history. Carmack open sourced *Quake*'s code in 1999, meaning coders have been able to completely overhaul the old engine and bring it much more in line with modern standards. The DarkPlaces engine, for instance, offers real-time rendering of light and shadow and enhanced effects. Others, like *QuakeSpasm*, focus on accuracy.

No game since has managed to replicate *Quake*'s spectacular level of success as a canvas for modding. Others have impressive modding communities, for sure, but not the same scale. With *Quake*, anything seemed possible – as long as it didn't take too many polygons. Games like *Second Life* tried to replicate the phenomenon online, and of course, now would-be programmers can get their hands on the likes of Source and Unity and Game Maker for free, rendering modding less important – at least for making total conversions or a wholly new game out of the bones of the old.

However long it lasted, the *Quake* era was important – kickstarting many an industry career, as well as providing the kind of playtime that most games can only dream of supplying. Some mods even got a commercial release, though not necessarily fondly remembered ones. *X-Men: The Ravages of Apocalypse*, anybody? The answer, in case you're wondering, is 'hell no'.

SEISMIC SHIFTS

Finally, the *Quake* story became... weird. After two official expansions (*Scourge of Armagon*, aka "The One Without The Dragon In It", and *Dissolution of Eternity*, aka "The One With The Dragon In It"), id disappeared for a while and released *Quake II* as a single-player focused sci-fi shooter in which you played a space marine fighting the unfortunately named Strogg. It was not very good. At all. Its main contribution to the world was, along with Unreal, teaming up with 3D accelerators to splash coloured

lightning around the world whether it liked it or not. Then *Quake III* ditched all of that for a futuristic arena shooter starring characters like a giant cyborg eye... before Raven Software's *Quake 4* went back to the Strogg nonsense for another single-player focused game.

With the recent *Quake Champions*, it seems clear a new *Quake* game is no guarantee of a particular story or style, but rather a way for id to make use of owning the name. Despite that, close your eyes and picture 'Quake'. What comes to mind isn't just another game to be ticked off as completed, nor a technical achievement to be respected, but that rare game that blew past its limits. *Quake* lives on to some extent in just about every shooter that followed it, and made gaming a better, more advanced, and endlessly more exciting place for its existence. ■

A NEW QUAKE GAME IS NO GUARANTEE OF A PARTICULAR STORY OR STYLE





WHY DO THEY HAVE MOUTHS?

Looking back at the 1998 PC port of **FINAL FANTASY VII** and becoming obsessed with a very particular quirk. *By Wes Fenlon*

Final Fantasy VII



I'm obsessed with the mouths in *Final Fantasy VII*. If you first played Square's groundbreaking 3D *Final Fantasy* on a PC, sometime after 1998, you might be thinking: the characters have mouths. So what? But if you played *Final Fantasy VII* on the PlayStation, you're more likely thinking: Wait a minute. Mouths? What mouths?

On the PlayStation, the lumpy-limbed character models of Cloud and Barret and the gang had big anime eyes, square fists and absolutely no mouths. The more detailed battle models did, of course, but out on the field? Nope. But when *FFVII* came to PC a year after the PlayStation, suddenly there they were: little mouths, in the form of a terse line or large, gaping black O.

Why are they there? Who added them, and who decided they should be there? I started searching for the answers to those questions after looking into the history of the PC ports of *Final Fantasy VII* and *Final*

TOP: Just some buff lads getting into a scrap with a bunch of squirrels.

LEFT: If you're gonna save the world from capitalism, a big sword is handy.



Fantasy VIII, two rare, early examples of console games being ported to the PC. Because Eidos's name was on each box, I'd always assumed that the British company had ported Square's games itself. But after coming across a GameFAQs thread and doing a little digging into *Final Fantasy VII*'s PC credits, I realized that all of the development staff had worked at Squaresoft USA. So I set out on a quest to learn more about *Final Fantasy VII*'s infamously quirky PC port. What was it like to port an early

PlayStation game to PC, why were new localization errors introduced while others were fixed and – the most important question of all – why the hell does Cloud have a mouth?

It didn't go well at first.

"I'm not really sure," wrote programmer Jay Fong in an email when I asked why the character models have mouths on

THERE THEY WERE: LITTLE MOUTHS, IN THE FORM OF A TERSE LINE

the PC. Fong works at Obsidian now, and his gig as a software engineer on *Final Fantasy VII* was his first real job in the games industry. "I recall we worked on the port for just a little over one year. After the project, I was promoted to a Senior Software Engineer position and when it was decided to go ahead and port *FFVIII* to PC, I served as Project Lead. Some of the programmers had left right around the time when work on *FFVIII* PC began so we didn't have as large a programming team as we did on *FFVII*. But we also had more experience porting the FF PlayStation code base."

Total strikeout on the question that mattered most, but Fong still had plenty to tell me about the process of porting *Final Fantasy* games to PC.

PARTY OF EIGHT

Final Fantasy VII and *Final Fantasy VIII* for PC were developed at Square Soft, Inc. in Costa Mesa, California. The original development was done by Square Co, Ltd. back in Japan. According to Fong, on *FFVII* they had a team of eight programmers. There are nine software engineers listed in the Mobygames credits, though as Fong explained later, at





least one engineer joined partway through the project. On *FFVIII*, Fong says it was only five programmers, but they finished the port in about a year, slightly faster than *FFVII*. (There are five software engineers and two senior software engineers, including Fong, listed in the credits.)

Porting Japanese PlayStation games, at the time, was no easy task – language was a serious barrier, and 3D graphics accelerators were in their infancy on PC. Here's Fong describing the development process:

“As far as tools, we were just using Visual C++ and Direct3D 5 at the

time. The Playstation architecture was obviously different and some of the code was written specifically to take advantage of that hardware platform. For example, I recall the UI programmer had some unique challenges because the original Battle System UI update was hooked up directly to the Vsync which would update just the UI portion of the screen (bottom), something the PS hardware allowed you to do. This enabled the original UI portion of the screen to be updated at refresh rate

TOP: Each discipline of the game was assigned to a programmer, including minigames.

LEFT: The battle screens proved particularly challenging.

making interaction feel very responsive, while the rest of the Battle System screen refreshed at a much lower rate.

“Different programmers did have areas that they were responsible for: world map, field system (ie, the pre-rendered area screens), UI system, battle system, mini games, etc. We tried to get as much of the original system's code compiled and running. All the data assets (models, textures, pre-rendered field backgrounds and FMV) were from the original PS versions.

“Obviously for low level systems that interfaced with PS hardware (eg, rendering, sound, FMV) we had to replace with PC-specific versions trying to mimic the original functionality. Something that the

console programmers were able to do was to meticulously lay out the memory usage. This allowed their code to make certain assumptions about resource locations (such as specific regions of video memory for character textures) and they were able to do tricks like changing colour look-up tables (ie, a palette) and manage dynamically streaming of data, like large Summoning effects while the character was playing the casting animation. We had to reverse engineer what they





we were doing and recreate the effect under Direct3D.

“The documentation was the code itself, and the comments (if any) were mostly in Japanese. We had a translator who we could ask to help us try and understand what the comment was referring to but that was still challenging since he was not a programmer. What really helped was when one of the original Japanese *FFVII* programmers [Kazuma Fuseya] moved to the US and joined our team. He was the perfect bridge between the two teams, being able to ask him questions. If he didn’t know the answer he was able to get in touch with the original programmers, which helped immensely.”

Today we typically expect the PC version of a game to be prettier, and run at higher framerates, than its console counterparts, but that wasn’t always the case. Fong’s comments help illustrate how console games, especially in the era before dedicated graphics cards were common, could make precision use of the hardware. Developing a PC game that ran as well across different systems was

ABOVE: Gold Saucer: cuteness, games and awkward date nights.

RIGHT: The cinematic summons looked amazing. (But soon had you begging for a skip button.)



challenging enough at the time, before you added the complexity of translating the PlayStation’s code to the PC. It’s no surprise that the development team was mostly programmers, with only a single artist listed in the port credits:

Jason Greenberg. Hoping he’d remember more about those haunting mouths than Fong, I tracked him down.

Greenberg now works as animation director at Infinity Ward and has fond memories of his time at Squaresoft.

“I was originally hired onto the project as a 3D artist,” recalled

Greenberg. “One of my main roles was supposed to be to help them with performance issues by reducing the polygon counts on many of the character and creature models.” Luckily for the game, though less fortunate for Greenberg, the programmers were able to develop a PC renderer efficient enough to use the PS1’s original models without compromising on polygons. Instead of working as a 3D artist, Greenberg ended up doing touch-up work on the 2D art, increasing the resolution of assets from 320x240 to 640x480.

“I focused on all the fonts and menu icons, and any textures used in



the UI. Doubling the resolution of the *Final Fantasy* finger icon was actually a pretty cool thing to work on. It's literally iconic. There were no fancy up-resing algorithms to use back then so I was basically filling in a ton of pixels by hand. You could imagine it wasn't all that creatively challenging and not the best use of my skillset as a 3D artist."

Greenberg also worked on *Final Fantasy VII*'s FMVs, which were compressed for the PC release rather than improved. "Unfortunately we didn't have access to any of the higher resolution renders, and they wouldn't provide the original assets to re-render, so sadly I had to compress most of the FMVs from 320x240 versions.

"Making them fit in the disc space required and playback properly was quite a challenge. In the end, I don't think they looked as good as they could have. If only Sqaure had been able to provide higher resolution frames. We had the same issue with many of the backgrounds. These were simply too dense to double resolution and touch up by hand so most of them I think were the direct PS1 versions."

COST OF BUSINESS

In 1998, you couldn't do the kind of 3D graphics work that went into *Final Fantasy VII* on a normal PC. Greenberg had a \$30,000 Silicon Graphics workstation on his desk "with probably Softimage and Nichimen Graphics software on it to do the low-poly modelling" he never ended up actually working on. But he

did put the hardware to use once. As a big chocobo fan, he created a new Squaresoft logo cinematic for the PC version. That's one bit of *Final*

Fantasy VII's history we can definitively put a name to.

The rest of Greenberg's graphics work was done on a typical PC with Photoshop.

Given the timeframe of the project, I'd guess an early Pentium II system with a CPU in the 300 MHz range. Greenberg remembers that compressing the FMVs took an excruciating amount of time, and any

FIXED SOME BLATANT MISTRANLASTIONS LIKE "THIS GUY ARE SICK"

issues meant "hours and hours" were being flushed down the drain.

I asked Greenberg about some of the differences between PlayStation and PC, like some objects strangely being larger or smaller. He said that, at least on the art side, they were likely mistakes that never got caught in testing. The triangles used to point to exit points on the pre-rendered backgrounds, for example, are smaller in the PC version, perhaps due to the doubled resolution. That's "probably an asset that I missed," said Greenberg. "I probably should have up-resed those, but my guess is that they look OK at original size so no one asked for that."

Both Fong and Greenberg remembered the challenges that came with testing *FFVII*'s PC port. With translators on the team, the PC version benefitted from some cleaned-up English, which fixed some blatant mistranslations like "This guy are sick." It also amusingly introduced some new errors, but Fong and Greenberg recalled more pressing issues.

"We had a dedicated QA team on-site helping us test the game as well as do compatibility testing. PC compatibility is vastly better nowadays than what it was back then!" wrote Fong. "They had a guy whose job it was to essentially speed-run through the game, creating save games which were then used by the other QA members to hammer through each section of the game.

"I recall one bug that occurred intermittently was a crash at the start

ABOVE LEFT: Some (OK, a lot) of the minigames weren't all that good.

BELOW: The resolution of the cutscenes couldn't be improved.



Final Fantasy VII

of the game, after the intro FMV as the train pulls into the station and one of the guys side-kicks a soldier. QA reported this bug as we were finalizing, which had all the programmers scrambling to reprogram and debug it ASAP. Exciting times!”

Greenberg recalled a crash bug that happened during the final boss fight, during Sephiroth’s supernova summon. “Near the end of the dev cycle, many of us were done with our work, and simply had to help test the game as much as possible... If totalled, I’ve probably spent at least a full 24 hours playing that one battle.”

Fascinating stuff, but what about the mouths, right? Why does Cloud eternally look like an emoji-before-emojis? Why does Sephiroth look like he could swallow an entire hot dog whole? Did Greenberg know?

“Great question. I’m wracking my brain to try to remember,” he said. Oh, come on!

“This is not something that we added on the art side since I never

BELOW: The mouthless PlayStation vs the mouthy PC.

BOTTOM: This guy, as you can see, also has a mouth.

changed the model files in any way. I believe I remember that the mouths were just sitting there in the original texture files for the characters. I’m pretty sure the code to drive them was probably there as well, and we just enabled it or something. I wish I could tell you more, but I just don’t remember it.”

Is this victory? Or defeat? Greenberg gave me what may well be the story behind the character mouths in *Final Fantasy VII*’s PC version: they were actually there the whole time, but had been disabled in the PlayStation version before it shipped. Why? My guess is that a PlayStation plugged into a typical CRT TV with a composite cable resulted in such a fuzzy, low resolution image, you couldn’t really see them anyway. The eyes were bigger, and more expressive, and so the mouths were cut.

But it’s possible there’s more to the story – maybe the developers wanted the mouths to animate but never got around to it, or simply ran out of time to properly implement them. They’re still there in the 2012 PC re-release, which fixed up the 1998 port to run at higher resolutions and play nice with modern versions of Windows. I took one more stab at finding out, contacting William Chen, another engineer on *Final Fantasy VII*. His response? “It





has been so long that I don't have any memory of it." Defeat.

GAME OVER

That's where the story ends for *Final Fantasy VII*, though I did ask Fong if he knew why Square stopped porting the *Final Fantasy* games to PC after finishing *FFVIII*. "I recall Square decided to pull all development back to Japan shortly after *FFVIII* shipped, but I'm not sure why they decided not to port *FFIX*. If I had to guess, I imagine it was a business decision based on what they projected the endeavour would cost versus the potential return in sales," he wrote. "*FFX* was the first on PS2 so I'd imagine they had their hands full just developing the game for the new platform, let alone worry about porting it to PC."

There's precious little history around the PC versions of these

games, and that's a shame – they're two of the first 3D Japanese games to make the jump from console to PC. That history deserves to be documented. What was a simple programming task in 1998 is now a mystery we may never know the answer to, because no one thought to ask. And this is for *Final Fantasy VII*, one of the most beloved games ever

made. Few games have had 30,000 word oral histories written about them, and we still don't know the full story behind the damn mouths.

What other

fascinating bits of history have already been forgotten? (If you worked on either port and have stories to tell, or know why everyone in *FFVII* has an O face, hit me up!)

And according to Jay Fong, while the developers were forbidden from adding easter eggs to the PC ports, there may be a unique version of

"IT HAS BEEN SO LONG THAT I DON'T HAVE ANY MEMORY OF IT"

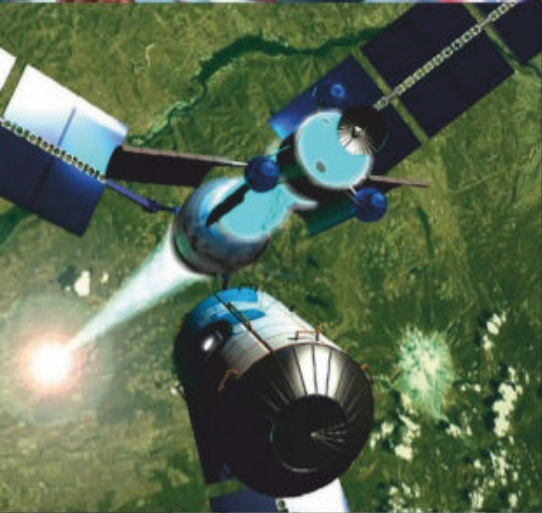


TOP: The cool, doomed, horrible city of Midgar.

ABOVE: That face when you're about to summon Bahamut ZERO at someone.

Final Fantasy VIII floating around on a CD, somewhere deep in the bowels of Square, assuming it wasn't tossed out in the trash.

"We did play a prank on one of the *FFVIII* producers. We edited the intro logo FMV, which started normally but after a few seconds it would briefly flash an awkward picture of him (let's leave it at that) and the frequency would slowly increase until it completely replaced the logo. We put it on a set of discs marked as 'Release Candidate.' Of course QA was in on this and they did have the real Release Candidate discs on hand as well. And no, it never made it out to the wild!" ■



20

GREAT MOMENTS IN PC GAMING

Our favourite memories from classic games





Going on the offensive in X-Com: Enemy Unknown

By Richard Cobbett

1

One of the great things about the original *X-COM*, or *UFO: Enemy Unknown* as it was called in the UK, was that it wasn't afraid to be about losing. Not for nothing did it have 'terror missions', which lived up to their name as the initial weak Sectoids got politely pushed out of the way for Chryssalids, hideous Giger style monsters who didn't just kill your jumpsuit-wearing soldiers, but implanted them with hideous alien wing-wang to turn them first into a zombie, and then into another bloody Chryssalid.

So many deaths. So many worlds lost.

Ah, but then comes The Moment, where the tables turn, and the X-COM organization switches from a plucky group of do-gooders into a toolled-up force of vengeance. When you stop going into battle with simple pistols and prayers and start tooling up with advanced technology ripped from the aliens themselves. Psychic boosters, plasma guns, the Blaster Bomb. When you stop playing defensively and start shooting down UFOs like they were clay pigeons. Launching your own ship, the Avenger, to fly to Mars and kick all kinds of arse.

That's the moment that defines *X-Com*, and arguably one of the biggest reasons why the series is always such a pleasure to return to.



Zapping the White House in Command & Conquer

By Wes Fenlon

2

The first time I saw the glorious FMV ending of *Command & Conquer*, it was at a friend's house. His older brother, eager for us to see this mondo cool moment, used cheat codes to nuke his way through the final mission of the Nod campaign, dropping bomb after bomb blindly until every GDI soldier was ash. Then, finally, an incredible power was put in our hands: the choice to destroy one of four famous international monuments, but not before Nod's leader Kane made a speech about cyberspace and a video played of Nod hacking its way into the GDI's Orbital Defense Matrix.

We're hacked in, control is ours, and Kane has bestowed upon us the honour of destroying whichever famous landmark we desire. Naturally, for a kid in America, the White House was the obvious choice. Watching it now, the destruction of the CG White House is too fast, too perfunctory, not dramatic enough. But this was a year before Independence Day, and *Command & Conquer*'s at-the-time cutting edge graphics made this a monumental ending.

Now, seeing the end of *Command & Conquer*'s Nod campaign doesn't carry much weight. But it belongs to a time when a single cutscene could capture a young imagination so thoroughly, you'd play a game over and over again just to relive those few seconds of payoff.



Going to year two in Grim Fandango

By Richard Cobbett

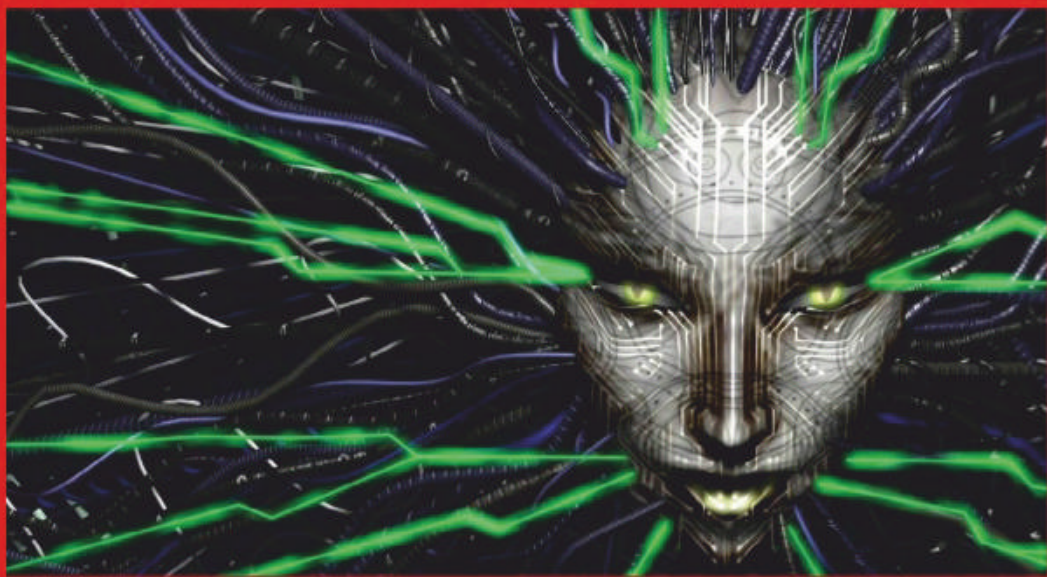
3

Grim Fandango is a beautiful adventure, and never moreso than during year two. That's the part set in Rubacava, an art-deco Casablanca where we leave hero Manny Calavera sweeping floors and return a year later to see him at the head of his own casino, a local hero. That transition alone is a beautiful bit of game design, but it's what follows that really cements it.

Where most games ultimately make you some kind of outsider, with little or no real place in the world, *Grim Fandango* opened up Rubacava with the idea that you know everybody, and more importantly, everybody knows you. Whether it's

the realisation that Manny has made contacts with the police, or the unrequited love between him and Carla the security guard, it's an immersive and even heart-rending place to explore. After all, you're not there during the good times, but picking up the story as Manny prepares to burn every bridge in the probably futile pursuit of the woman he let down. You arrive as a king. You leave back at square one.

And oh, that music. That wonderful music. Rubacava is one of the greatest towns in gaming, give or take a couple of particularly painful puzzles. It's not a place you'd likely want to live, but it's a great place to have lived. If only secondhand.



The Shodan reveal in System Shock 2

By Jody Macgregor

4

We knew that Shodan, the villainous AI from the original *System Shock*, would return in *System Shock 2*. She was even on the box cover. What we didn't know is how.

After *System Shock 2*'s branching character creation fast-forwards you through several years of education and a military career, you wake up on the Von Braun, the first spaceship capable of FTL travel, to find everything's gone wrong. Doctor Polito, one of the few survivors, guides you through the chaos. But when you finally get to her office to meet her in person Polito is dead, and clearly has been for a long time. Then the door shuts behind you, and the walls dissolve. Shodan, who has been impersonating Polito all this while, takes control of your surroundings and forces you to be the audience for her show.

System Shock 2 was one of the early immersive sims, a genre that's all about putting the player in control. They're sparing in their use of disruptive narrative techniques like cutscenes. That's why it's so jarring to be trapped in a room while Shodan monologues at you, the heavily processed voice of Terri Brosius bouncing up and down the octaves, with more vocal tics competing for your attention than a Nicki Minaj verse. It's threatening, surreal, and unforgettable.



Crossing World of Warcraft by air

By Richard Cobbett

5

Attributing any 'first' to *World of Warcraft* is an invitation for everyone to start going 'Well, ACTUALLY...' in reference to something like *Meridian 59* or *EverQuest*.

But there's really nothing quite like your first flight over the world of Azeroth. MMOs of the time were still predominantly zone-based rather than presenting a full world to explore without loading screens. There were exceptions. *Dark Age of Camelot*'s horse-riding through the wilderness stood out particularly well. But *World of Warcraft* took it so much further.

We'd come to tire of travel eventually, of course, and fill the gaps first with *Bejewelled* plug-ins and then by Blizzard essentially cutting it out altogether. But that first flight across the world was spellbinding.

It was a chance to soar majestically, and show off Blizzard's artistry and complete disregard for geology, with the high-point almost certainly being racing through the sewers of Undercity and out into the real world. All those adventures, waiting to be had. All the loot to be gathered. All the friends to be made.

Crossing the sea for the first time evoked a similar feeling. But nothing quite beats seeing Azeroth by air that first time, and looking forward to a time when maybe, just maybe, you'd be able to fly your fantastical beast of burden yourself.



The Dark Carnival level in Blood

By Richard Cobbett

6

Blood was always the odd-cousin of the Build engine games, in that everyone agreed it was good (unlike, say, *TekWar* and *PowerSlave*), but rarely did it get much of a look-in next to *Shadow Warrior* and *Duke Nukem 3D*. A shame, because while it was a deliberately ugly game, it did some cool things, especially in terms of your destructive power. Not many games start off by letting you chuck entire sticks of dynamite around, quoting old horror movies as you go.

As with many shooters of the era though, the best levels were in the shareware version. And top of them all was Dark Carnival.

It wasn't just a shooting gallery, but a whole collection of fun little distractions like kicking heads into targets, tightrope walking across a snake pit, and even access to a bonus level set in an evil haunted house. Encountering it was a balloon-popping journey into charnel house whimsy that, like *Duke Nukem 3D*, really helped sell what we could look forward to in the next generation of shooters. The one after the crap early 3D ones, of course.

Best of all, you could kill mimes. So many mimes. In many horrible ways. While the rest is obviously pretty simple by modern standards, some pleasures just don't get old. Unlike every mime act ever. Burn!



Feeding in **Vampire** **The Masquerade –** **Bloodlines**

By Jody Macgregor

7 There are a lot of things you can change about vampires and still have them be vampires. Not liking garlic? Unnecessary. Being killed instantly by sunlight? Even Bram Stoker didn't have that. Aversion to holy symbols? Super optional.

But if you get rid of the need for blood you don't really have vampires. There are no scenes in *Underworld* where a vampire bites someone, and so it ends up feeling like a movie about goths with guns instead.

Fortunately, in *Bloodlines* drinking blood is as important as it should be.

There's a blood meter across from your health, and it goes down whenever you use your cool vampire powers. If it runs out the Beast inside you is unleashed, meaning you'll lose control and go on a rampage that's likely to end with cops reducing you to ash. To avoid that you feed. Sure, you can suck on a blood pack from the corrupt guy at the blood bank, or maybe you can stomach eating a rat. Most of the time, you find a person.

When you're first let loose on the streets of Los Angeles there are a few

warm bodies around. A homeless beggar stands near your front door, a confused yuppie looks lost nearby, a sex worker walks down the road. There's probably a guy pissing in an alley near the nightclub, and inside that club someone you might be able to seduce and leave with a vague memory and one hell of a hickey.

The moment you bite is never underplayed. It's always the most dramatic it can be. Even if you're playing in first-person the camera leaves your body to frame things perfectly, the colour drains out of the world and everything goes dark except for a spotlight shining down on you and your victim. You rear back and chomp. The viewpoint spins and the blood meter fills as their health falls.

Maybe you pull back in time, or maybe you let them die and hear that fatal chord play as they drop out of your grasp. Whatever happens, it's never trivialised or meaningless. In a game that exaggerates almost everything for effect, from the outfits to the architecture, feeding is no different. *Bloodlines* understands that you can't have vampires without blood, and doesn't let you forget it.



Firing the BFG for the first time in **Doom**

By Richard Cobbett

8 Come back with us to a simpler time. 1993. Before YouTube. Before most of us had the internet, in fact. When *Doom* was debuting on magazine cover-disks and blowing everyone away with its realism and incredible originality. Yes, it was a long time ago. Ah, but look closer at the shareware edition.

You see it? It's the weapons list at the bottom of the screen. Pistol. Shotgun. Chaingun. Rocket launcher. But what are those last two? Plasma gun and... BFG? What's a BFG? A weapon so mighty and mysterious, not even the IDKFA code could summon it. The only way to find out was to play the registered version.

Remember, this is the era where the FPS genre basically consisted of *Wolfenstein 3D*, where the best you could hope for was a Gatling gun. That was nothing compared to the hulking lump of hardware that finally rose up once the BFG was acquired. The rumbling as it prepared to fire. The explosion of green energy that scythed through everything on screen. The sense of power unrestrained. That noise. PSSCHOOOW!

Games have had many great weapons, but few so mighty to justify the months, maybe even years of staring at the empty slot on the interface and wondering what that last weapon would be like.

The answer: Worth the wait. That's all that matters.



Digging through discs of **1,000 shareware games**

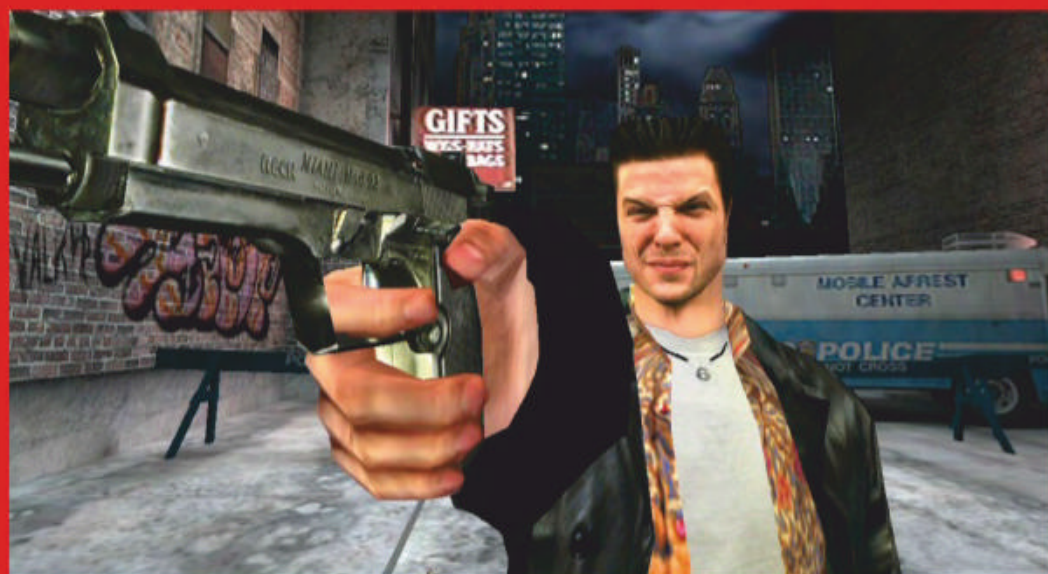
By Richard Cobbett

9 Before the internet, games were hard to come by. Most of us only got one for our birthday and Christmas. The rest of the time, we had to make do with magazine cover disks, with a k. Typically a whole 1.44MB of joy to dig into, in the hope that the disk editor had uncovered some amazing new shareware game or endlessly replayable demo.

But with the dawn of the CD came a whole new world of gaming goodness. Stores would stock discs with names like '1001 Free Games', with only the tiniest text clarifying that most of them would be

shareware demos consisting of one episode and a request to send a cheque to someone on the other side of the world. But that didn't matter. Digging in was like digital archeology, with every new directory having the potential to contain the next *Doom*.

Quality was not exactly top priority. The joy of discovery was better than the actual games. How else would so many of us have learned of titles such as *Snake Pit* and *Pickle Wars*? Truly, a whole world with every compilation, even if it did mean filtering through five billion crap EGA platformers in the hope of striking gaming gold.



Max Payne's face in **Max Payne**

By Tom Senior

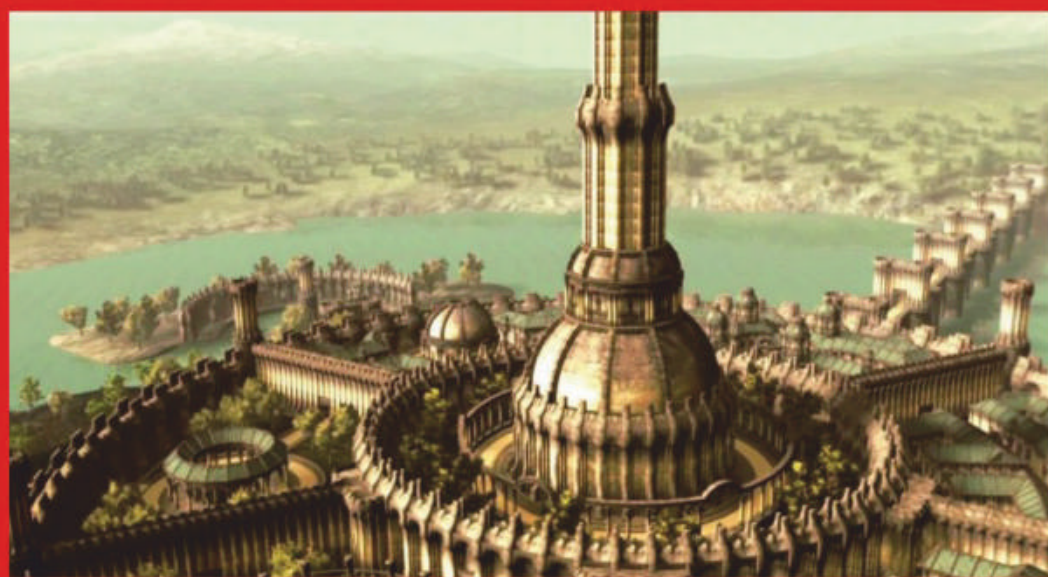
10 Can a man's face be a moment? This one can. It's a photograph wrapped around a low-poly head to represent the angst-ridden gunslinger Max Payne. It's a picture of Remedy writer and designer Sam Lake, who chose to represent the character's deep pain at the loss of his family by scrunching up all the parts of his face at the same time.

Should we do another take, maybe more brooding and serious? No, Sam. This is it, the expression *Max Payne* players will be looking at for 12 hours. Nailed it.

It is the face of a man so cross his eyebrows have gone to war over the middle of his face. It is the face of a man engaged in a deep internal conflict with a bad curry that won't quit. It makes me unreasonably happy whenever I see it, and I have played a lot of *Max Payne*.

I'm convinced it would have been a lesser game if the studio had used a more conventional look. *Max Payne 2* dropped the Sam Lake grimace for a new head based on the actor Timothy Gibbs. Lake still continues to appear in the surreal video skits you can find on televisions in *Max Payne 2* and *Alan Wake*. It's not quite the same.

It's a rare example of a game character being memorable purely because of their demeanour. Max eventually evolved into a generic thug over time, but I'll always remember him as this goofy hardboiled hero.



Stealing an Elder Scroll in The Elder Scrolls IV: Oblivion

By Wes Fenlon

11

Oblivion was my first *Elder Scrolls* game, and I didn't know much of anything about the series before I started playing. Most importantly, it never occurred to me that the *Elder Scrolls* were actually a thing. It just seemed like a good name for a fantasy game. Elder gods, old paper, yada yada. There I was, taking orders directly from the Gray Fox, the mysterious leader of the Thieves Guild, when I'm told I need to steal a damn Elder Scroll. From the Imperial Palace. It's that moment when a character in a movie says the title, except instead of groaning (*The World is Not Enough*) I was full-on, hell yeah into it (*Snakes on a Plane*). It's really all in the execution.

It felt like I was about to steal the original Ten Commandments tablets or something, a holy object I had previously assumed was pure allegory. The timing was also perfect. This was my first guild, I was still low-level, and the stakes of this mission conveyed an anything-is-possible sensation. And it was intense as hell, because Imperial guards could wreck me if I got caught.

The thing that really cemented it for me was that I did get caught, which meant I was running in terror from a small army of Imperial guards, the most treasured relic of the Empire tucked in my inventory. Somehow I made it to the secret chute in the fireplace and survived the fall with the special boots I was given. I made it!

There are many ways that mission can go, and it won't impress as much if you can sneak by the guards with ease. Do it early, by the skin of your teeth, and it's a thrilling heist – one of *Oblivion's* most memorable moments.



The T-rex in Tomb Raider

By Richard Cobbett

12

In retrospect, maybe Lara should have become a zoologist instead. I mean, how much could any ancient cup sell for compared to a living T-Rex? This is one of the defining moments of early 3D boss-fights, matched only by the attack of the first Fiend in *Quake*. The T-Rex living in The Lost Valley didn't just sit there and take it though, especially in *Tomb Raider: Anniversary*, where its claws and jaws were coupled with... shudder... crap QTE sequences.

Like all the best boss fights, it took its time. You'd already fought a few raptors before entering its domain – a sealed-off valley with a non-suspicious corner. Turn it, and there's the original Mister T, ready to chew off Lara faster than you can say, "Oh shit, it's a—"

At least, until Lara demonstrated why the words 'endangered species' now universally translate to 'any animal in the vicinity of Ms. Lara Croft'. At least it was a quick way to go. And the last of its, presumably?

Ha-ha. No. In the next game, two of them showed up at once.



Trolling the villain of Jagged Alliance 2 by sending flowers

By Richard Cobbett

13

It's the little things. *Jagged Alliance 2* is a game of wonderful details. You don't assemble your team via a boring menu, but a series of fake internet pages. Every mercenary you hire for your mission to free a small island from its tyrannical dictator

Deidranna has their own personality, relationships and skills...

...and even that flower shop has a purpose. Not, as you might think, because it's covering for some high-tech weapons plant. No, it sends flowers. And it lets you send them to the villain. You don't get high-class trolling like that in many games.

Accomplishing literally anything in Dwarf Fortress

By Wes Fenlon

14

I will never master *Dwarf Fortress*, if such a thing is even possible. I feel like that would essentially be the same as mastering life, except with really obtuse keyboard commands instead of natural motor functions. But *Dwarf Fortress*'s infamous and intimidating complexity makes even small accomplishments feel monumental. In most strategy games,

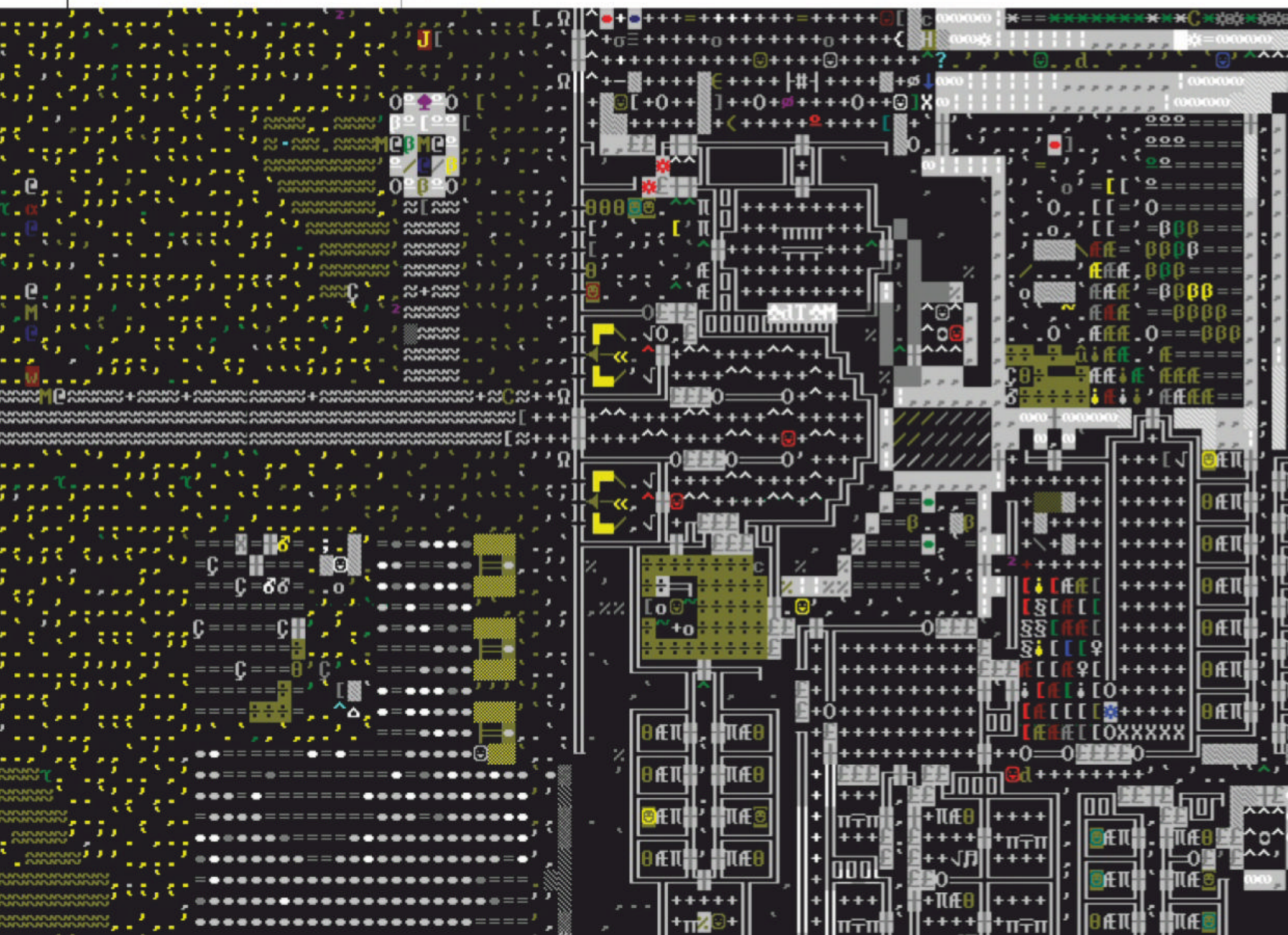
assembling a base is as simple as selecting a building from a list with your mouse and plopping it down. In *Dwarf Fortress* telling your dwarves to dig out a room, use the wood they've chopped to build a bed and a door, and then properly zoning it as a bedroom so someone can sleep in that room is a tiny triumph.

Even building something simple feels like an accomplishment on the interactive level because you've learned your way around a difficult

UI to do it. But as with everything in *Dwarf Fortress*, it goes deeper than that. Because you don't command the dwarves directly, coming up with a plan and executing it and then seeing it come to fruition is a thrill. And it's all the more satisfying because you can peer into your dwarves' heads and see their thoughts and hopes and try to make them happy.

In some other game, you might have an objective to craft a high-level weapon or relic by collecting the rarest resources from the hardest enemies. In *Dwarf Fortress*, one of your dwarves may suddenly, inexplicably, need to craft the best fucking chair the world has ever seen, and will be so intent on its creation that they will literally die if they're unable to make it. If you can supply the resources they need, you'll be satisfying their greatest dream in life. The point is that every little thing in *Dwarf Fortress* matters, and almost all of it is ridiculous.

But mostly you'll feel smart just for learning the controls. That shit's really hard.





The tragic opening to Homeworld

By Richard Cobbett

15

Strategy games aren't typically sentimental. It's hard to ponder the nature of mortality when looking at a map and feeding between one and one billion people into a glorified meat grinder. *Homeworld*, however, was different. Its trailer set an oddly sombre mood, with spaceships flying around to Samuel Barber's Adagio for Strings. It stood out.

The intro to *Homeworld* should have been a joyous occasion. Your people have put everything into the construction of a mothership designed to take them across the stars back to the home they were banished from long ago. But no. That would not be an Adagio for Strings-level situation. That kicks in after you test the jump-drive and return to find that, in your absence, a mysterious alien force has obliterated the whole planet. Cue the music as you spend a mission not on the offensive, but simply trying to rescue as many as you can. And then, with nowhere to go but onward, embark on the journey to reclaim what was once yours.

It's a scene that plays out with incredible restraint. It's you, the music and a few ships floating around, with the charred remnants of the planet telling all the story that you need. This is a moment of regret, of catastrophe, of remorse, all sold with that haunting tune.



Learning to ski in Tribes

By Richard Cobbett

16

Starsiege: Tribes was a weird game, being essentially a pack-in bonus shooter that came with the almost completely forgotten mech-game *Starsiege*, in which two teams fought with the '90s most awesome mode of transportation – jetpacks. It was a game of incredible scale, with precision targeting required to land a kill, and a base-assault mechanic that still stood out a few years ago when the series returned as *Tribes: Ascend*.

Tribes had rocket jumping, but its real secret was skiing – abusing the physics engine to zoom down hills while jumping, and thus crossing the map at incredible speed. At the time, it was so fast that you could practically feel the wind in your hair as you did so, especially if you set up a small desk fan on top of your stupidly huge CRT monitor. The experience of bombing across a map, spinfusor flying, and taking an enemy base before they could even get started gave *Tribes* an edge that nothing else at the time could get close to. And after that – jetpacks were still cool!

Later games didn't simply keep this tactic, but wove it deeper into their fabric. *Tribes 2* maps were designed around the ability and the series even offering tutorials on how to pull it off. After a while, if you weren't skiing, you weren't surviving. Learning to shoot on the move... that took more practice. But still, there's little as satisfying as cresting a hill and nailing that enemy's head as you sped across the dirt. Shazbot!



The ludicrous gibs in Rise of the Triad

By Jody Macregor

17

The 1990s were a good time for videogame gore. Two years after *Mortal Kombat* and one year after *Doom*, *Rise of the Triad* was a particularly memorable example of the artform of making red stuff come out of people in entertaining ways.

Apogee had been working on a sequel to *Wolfenstein 3D* when the project was cancelled, leaving them with a bunch of first-person shooter assets. They built *Rise of the Triad* on those bones (and it was later renamed *Rise of the Triad: Dark War* to differentiate it from the remake). Apogee improved on *Wolfenstein* in a bunch of ways, especially with the scale of their game's destructibility.

Glass shattered, bullet holes persisted, and various bits of level scenery like plants and lights broke.

The most impressive destruction was that visited on the enemies, who popped into red smears. Hit them with a rocket and they were reduced to spinning offal: an eyeball; a severed hand that gave the finger as it passed; a skull with some attached spinal cord. Accompanying this carnage was the message "Ludicrous Gibs!" 'Gibs' was apparently short for giblets at Apogee. This internal studio slang would be referenced by *Quake* and become a lasting bit of gaming lore.

It may not seem like much today, but the first time an eyeball slid down your screen it was pretty special.



Creating a hero in City of Heroes

By Richard Cobbett

18

Rest in peace, *City of Heroes*, the first and still one of the only MMOs that had the courage to make everyone awesome at Level 1. Whether a Blaster or a Controller or whatever else, you entered the world feeling like a living god. Leaping structures in a single bound. Towering over the citizens. Dispensing justice against street-thugs.

Of course, over time that Level 1 power would skyrocket until you were ready to take on super villains, and giant blob monsters, and everything else you'd expect from an MMO. Take a step out of your level range and you'd be punched right into the nearest hospital. Ah, but it didn't matter. Within those starting areas you were a living god. It wasn't just about power. While *City of Heroes* had its archetypes, it offered unprecedented freedom to create the hero you wanted, with just about every costume piece available up-front for you to play and experiment with. Pick your power. Create a look. Then realize that the name you wanted was taken and go back to the drawing board. It was almost more fun roleplaying your heroic alter-ego than biffing and bashing baddies. *City of Heroes* wasn't the last superhero MMO, but neither *Champions Online* nor *DC Universe Online* really nailed that fun and freedom. We still miss it.



Insult sword-fighting in Monkey Island

By Richard Cobbett

19

One of the most frustrating misconceptions in adventure gaming is that if you want to make the next *Monkey Island*, you should basically make *Monkey Island*. In fact, *Monkey Island* was a game rooted in inventiveness and ambition. Just look at the insult swordfighting, a concept so genius, nobody has ever quite matched it. The insults are legendary in gaming. You fight like a dairy farmer! How appropriate, you fight like a cow! I've spoken with apes more polite than you! I'm glad to hear you attended your family reunion!

It's not just that it spared us a hideous minigame like those you might have gotten in Sierra adventures of the time. It's that it's a perfect fusion between the cerebral nature of the adventure and the excitement of a classic film duel. While replaying it can get a touch tedious when you know all the responses, it's still hard not to enjoy the goofiness and the lack of any real stakes – even defeated, the worst that happens is a “Be off with you, then...”

The wonderful addition of Carla the Sword Master having her own unique insults, too brutal for a regular pirate to wield, but answerable with your existing responses, only cements it as a perfect little piece of design that justifiably went down in adventure and broader gaming history.



The Guardian speaks in Ultima 7

By Richard Cobbett

20

“AVATAR! Know that Britannia has entered into a new age of enlightenment. Know that the time has finally come for the one true Lord of Britannia to take His place at the head of His people! Under my guidance, Britannia will flourish. And all the people shall rejoice and pay homage to their new... Guardian! Know that you, too, shall kneel before me, Avatar. You too will soon acknowledge my authority. For I shall be your companion. Your... provider. And your master!”

Games didn't usually talk in 1992. Villains certainly didn't literally try to stick their head through your screen to shout at you. But the Guardian of

Ultima VII was no ordinary villain. Sitting in the last level and waiting for an ass-whooping? Not for him.

He was a constant presence in your adventure, initially pretending (albeit not very convincingly) to be your friend, and later screaming in your ear as you slowly dismantled his scheme. The result, in this usually voiceless time, was an enemy that you could believe was watching you play, chortling as he made you jump with his regular interruptions. An enemy against whom you were playing a glorified chess match. A worthy foe for an Avatar who had saved the world at least six times.

Bit of a pity that in retrospect, he does look a bit like a Muppet.



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